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GLEANINGS

IN BEE CULTURE

CONTENTS

MARKET QUOTATIONS.....	212
STRAWS, by Dr. Miller.....	219
PICKINGS, by Stenog.....	221
CONVERSATIONS WITH DOOLITTLE	222
EDITORIALS	223
Salisbury's Automatic Windmill.....	223
Retailing Candied Honey.....	224
Burning of Gus. Dittmer's Factory.....	224
Glycerine in Honey.....	226
Useless Patents on Hives.....	226
GENERAL CORRESPONDENCE.....	227
Peddling Honey.....	227
F. A. Salisbury.....	229
The Automobile for Business and Pleasure.....	230
Scientific Names.....	232
Sectional Brood Chambers.....	234
Some Comments on Late Items.....	235
HEADS OF GRAIN	236
Putting Back Swarms.....	236
Queens Better the Second Season.....	236
Flat Covers of California Redwood.....	236
Caging Queens to Prevent Swarming.....	237
Price for Help in the Apiary.....	237
Honey-Extractor Driven by Foot-Power.....	237
A Cold-blast German Smoker.....	238
Cellar Wintering with Furnace.....	238
Maple Sugar as a Bee-feed.....	238
Shall Bees Have Winter Flights?	238
REPORTS ENCOURAGING.....	239
OUR HOMES.....	240
GARDENING.....	243
SPECIAL NOTICES..	256

THE A.I.
MEDINA



ROOT CO.
OHIO

U.S.A.

Western Edition.

ENTERED AT THE POSTOFFICE AT MEDINA, OHIO, AS SECOND-CLASS MATTER

DANZENBAKER HIVE

"FACTS ABOUT BEES" A 64-page book written by Mr. F. Danzenbaker, giving a complete description of his famous hive and directions for using. Full of valuable information. Sent free on receipt of a two-cent stamp to pay the postage. Send for it.

The Danzenbaker Hive.

The comb-honey hive. Three points of excellence: **QUALITY**—You can produce better-looking honey. **QUANTITY**—You can produce more of it. **PRICE**—You can get more per pound for it.

The Best Bee-keepers use it.

Mr. Hershisier, manager of the New York State apiarian exhibits at the Columbian Exposition, 1893, where he won credit for himself and State by his magnificent display of comb honey, was selected as superintendent of the apiarian exhibits at the Pan-American Exposition. Being an up-to-date bee-keeper, and having a keen interest in the latest apicultural appliances, he installed a trial apiary of 10 colonies of working bees, mostly Italians, but with some hybrids, and one colony of black bees. The last named made the best record, storing 111 pounds in a Danzenbaker hive.

I have kept bees three years, and owe my success to the Danzenbaker Hive. I shall as soon as possible send you a report of my honey crop. But one thing I know now, and that is, that one Danz. colony gave me over 100 lbs. first-class honey, while a ten-frame Dovetailed hive gave 25 lbs., and the Danz. winters in fine shape without feeding. Both hives had an equal footing.

JASON B. HOLLOPETER.

Union Bridge, Md., Oct. 26, 1903.

Danzenbaker's Sample Hive Outfit for First Orders.

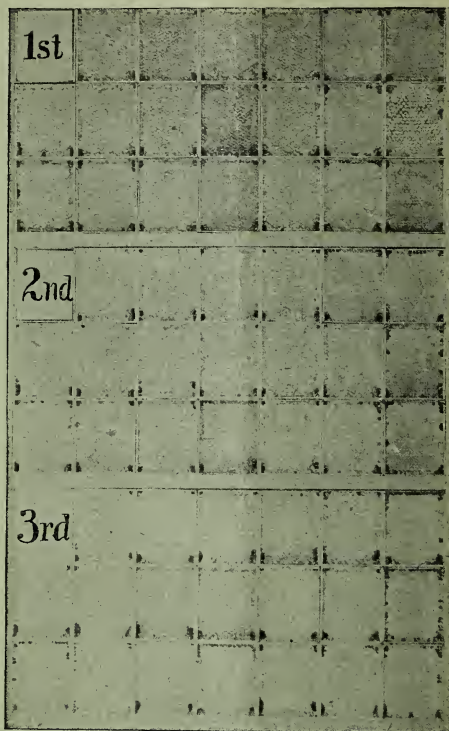
Five Danz. AD6 sample hives, 4 put together ready for paint, including covers and bottoms; one brood-chamber fitted complete as a model, fittings for the other four in flat, with foundation for one-inch starters \$7.00

Five Danz. 4M sample supers including sections and foundation-starters. All 5 supers are nailed, and one has inside fixtures in place as a model, the fittings for the other four in flat..... \$4.75

The Best Comb-Honey hive.

I am *very, very* much pleased that you are willing that I should recommend the Danzenbaker Hive. I have had a great many inquiries about it, and have not felt at liberty to recommend it over our regular hives. At first I was prejudiced against it, but the sales have increased without recommendations, and wherever I have sold they have bought again and praised the hive with extravagant claims, and I am forced to the conclusion that it is the **BEST COMB-HONEY HIVE** on the market.

J. B. MASON,
Manager Northeastern Branch,
The A. T. Root Co.



PAN-AMERICAN PRIZE HONEY.

From a photo of the 60 prize Danz. sections produced in the State of New York.

First 20 sections, net weight 19 lbs. 11 oz.; stored in Danz. hives, awarded diploma and \$25.00.

Second 20 sections, net weight 19 lbs. 9 oz. stored in Danz. hives, in the trial apiary at the Pan-American Exposition, awarded \$15.00.

Third 20 sections, net weight 18 lbs. 13 oz.; produced in Danzenbaker hives, awarded \$10.00.

The great popularity of the Danz. hive has brought the shallow frame into prominence. It must be remembered that no other hive contains the essential points of the Danz.

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TO BEES
AND HONEY
AND HOME
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No. 5



THE *National Stockman* says the Illinois Experiment Station has discovered that the bacterium of sweet clover is all right for alfalfa. How's that?

A POINT in favor of paper packages that has hardly been emphasized enough is the convenience and beauty of form of the honey after being stripped of paper and put on the table. [Yes, this is a good point. I predict a great future for these paper packages.—ED.]

A. STRAEULI, a Swiss authority, declares in *Bienen-Vater* that it is not only his conviction, but that of many others, that there is nothing left for European bee culture but to become Americanized as quickly and completely as possible. [See answer to another Straw on this subject.—ED.]

I DON'T KNOW the answer to Geo. H. Roe's question, page 187, but I venture to guess that, in a country where there is "a lot of rain in winter, with very little frost, and then never down to zero," there would be some advantage in having the bees "under a cheap open shed with only a roof."

AUGUST KAMPRATH, in *Bienen-Vater*, speaks of sweet clover as an annual, and says that, on account of strong sweetish fragrance it is despised by cattle, and eaten only by sheep. Even though it be possible that it is an annual over there, I suspect Austrian cattle would learn to eat it as well as American cattle.

D. W. HEISE must be converted clear through to give up selling tobacco, p. 189. The Christian merchant who sells tobacco must have a befogged brain or befogged something; yet I'm sorry to say that "in this locality" those who are not thus befogged are scarce as hens' teeth. I've

known a man to preach to the boys in Sunday-school against tobacco, and then sell it to them on week days. Consistency, thou art a jewel!

WAX PRODUCTION, can it be made as profitable as honey production? That's the problem a French bee-keepers' society (de la Meuse) has set itself to solve. A series of experiments is placed before its members, with five prizes ranging from \$4 to \$20. One point to be determined is the comparative results in double and single walled hives.

G. M. DOOLITTLE says, p. 171, he doesn't see why any one should object to using honey in sugar syrup, "even if the same had to be bought." In many cases it would have to be bought, if used at all; and in a large proportion of those cases it would be exceedingly difficult to be sure that the honey bought was free from foul brood. Rather than run any risk, would it not be better to use tartaric acid instead of honey? Perhaps it might be better still to feed early enough and thin enough to need neither honey nor acid.

J. A. GREEN says, p. 180, Illinois honey keeps all right in paper until the heat of summer. There's the rub. Doesn't alfalfa honey keep through the heat of summer? [No, it did not keep solid in this locality last summer; and that emphasizes the point that such honey should be used up before warm weather. The local beekeepers should take it off the grocer's hands if they do not wish to ruin their market for such goods, because there is danger that it will run out and daub the shelves, attract flies, and make a muss generally.—ED.]

I THINK, Mr. Editor, you'd change your opinion about that metal frame-hanger, p. 179, upon trial. The chief propolizing of a Hoffman is not where the frame rests on the rabbit, but where the end-bars come together; and this the frame-hanger leaves as bad as ever. [But propolizing at the points of contact between Hoffman frames in most localities is not a serious objection. The metal edges would be better than the wooden ones. Your locality is like that of a few

others, but very much unlike the great majority of them. I know that you have more propolis than we do here, and it is of a different character.—ED.]

"THE IDEA of using candied honey as a winter food is a good one," p. 184. Now, some novice reading that will feed candied honey and find it a dreadful waste, and then you'll have a lot of explaining to do, Mr. Editor. I've been watching Mr. Fixter's doings with interest, but I protest against his calling Scholz candy "candied honey." Candied honey has no sugar in it. [Thank you for the correction, doctor. I misunderstood Mr. Fixter; and now that you have called my attention to it, the thing that I was apparently indorsing would be wasted.—ED.]

"BEE-KEEPERS, as a rule, will not have a cover *just* wide enough," p. 175. That's new to me. "In this locality" the opinion is vehement that any thing more than *just* wide enough is a nuisance. [I do not know of any one else in your locality who has very much to do with bees. That statement was based on wide experience as a manufacturer. We used to make our flat covers just wide enough; but bee-keepers kept complaining until we added $\frac{1}{4}$ inch on each side. In your article, is not the local "opinion" you speak of *your* opinion?—ED.]

DELOS WOOD has sent me a sample of honey artificially ripened. Just what is the value of the artificial ripening can, of course, be told only by direct comparison with the same honey ripened in the hive; but this honey seems of good flavor, although hardly as heavy in body as honey produced here. [I have tasted samples of bee-ripened and naturally ripened honey. While the two compare very favorably in flavor, yet I could see the difference was in favor of the naturally ripened product. Is it not true that the process of ripening on the part of the bees changes the honey chemically to a certain extent?—ED.]

I'VE PUZZLED no little over that performance of E. A. Newell, p. 188. Now see whether I have the correct situation after he's through: The sanitary bottom board on the old stand, and on it a clean hive with frames and starters, on that a honey-board (queen-excluder), and over that the old hive with the brood. Is that right? If the gas goes from the bottom-board up to the second story and does its work there, wouldn't it be simpler and better to set the old hive, bees and all, directly on the sanitary bottom-board without any clean hive in the case? [If your idea is correct (and I think it is) the old hive would be just as good.—ED.]

BRO. A. I. ROOT, is it not barely possible that you might get one of those hollow potatoes without a hollow (p. 192) by way of a sport? Are they just as hollow on very poor soil? [I suppose, doctor, it will have to be done by way of sporting. But this sporting business does not always go

the way we want it to. I have tried them on only one kind of soil—that of Northern Michigan—and there every thing was hollow. The little bits of potatoes, not larger than hickorynuts, showed a rudimentary hollow; and the man who sent them to me gave as a principal reason why I should not bother with them was that they were all hollow.—A. I. R.]

ONLY TWO DAYS bees could fly since the first of December at Medina, p. 172. That's just two days more than here. I happen to have the morning temperatures from Jan. 27 to Feb. 18, and the average is 4 above zero. And that includes the warmest spell since Dec. 1, and does not include the coldest. No, the weather has not been sweltering. [This is one very strong reason why you should winter indoors. Many facts go to show that outdoor wintering is practical only where the bees can have one, two, or three days of mid-winter flight; or, we will say, days when a cluster can change its position, and thus get on to a fresh supply of stores.—ED.]

IN REPLY to the question, p. 167, "If the entrances are kept reasonably clear, is it not true that $\frac{3}{8}$ depth would be enough?" I should say that, if the entrances were constantly kept entirely clear, a depth of 2 inches would be very much better, especially if the bees should fill nearly all the $\frac{3}{8}$ space. The deeper space gives the bees more air. Are you entirely sure you might not have had better results with the deeper space? To your other question, I reply that, even if I should look at my bees in the cellar every day, I should still want the deep space. [No, I am not; but we have secured reasonably good results with $\frac{3}{8}$ -inch depth. The only thing that concerns me is that you may be right, and that we are every winter losing a certain advantage that might accrue from the deep entrance. I should like to hear from our subscribers on this point.—ED.]

IT SEEMS STRANGE that the man who has done more than any other man living to advance bee-keeping should so stubbornly oppose progress as does Dzierzon in some things. American bee-keepers will smile when they read that he denounces opening a hive from above because it takes so much time, and can be done only by killing a great many bees. [Is there not here a good lesson for you and me (for we are both young, you know), that, when we get old, we should be careful not to allow our old preconceived notions to run us into obvious error? Certainly American bee-keepers will smile at Dr. Dzierzon, notwithstanding we may admire him for what he has done in the way of clearing up the subject of parthenogenesis. And we admire him, too, for placing bee-keeping in Germany on a higher plane of practicability than it formerly occupied. But he did not begin to make as long a stride forward as did father Langstroth. If there is a growing conviction in Europe that European bee culture

should be Americanized as soon as possible, it only goes to show that the bee-keepers on the other side recognize that Dzierzon did not go far enough.—ED.]

J. M. GOUTTEFANGEAS, in *Revue Ecclétique*, says ventilating bees work *tail down*, and calling bees *tail up*. He thinks the call, as when a swarm is entering a hive, instead of being a sound of joy is one of fear or alarm. Among the proofs he cites, is that this same call, tail up, is given by bees whenever disturbed, and even by chilled bees when warmed up. But it's hard to give up the notion that a swarm marches into its new home with a note of joy. [I had never noticed there was any difference in the position of the tail when the bees were fanning. I had always supposed it was up. I shall be interested in making this a matter of observation the coming summer. Like yourself I do not believe it is true there is no joy on the part of the bees when they march into their new home. If there is any difference in the elevation of the tails it must be due to the idiosyncrasy of the particular swarms or colonies.—ED.]

IN REPLY to a question, p. 168, I can't look the matter up now, so can not say positively, but I *think* that several bee-keepers' organizations in Europe have done more than our National in securing legislation, etc. They get more from the public crib than we do. The Central Union in Austria, last year, got grants of \$2788, and its balance-sheet shows a total of \$7753 received and disbursed. This year it has set itself the task of providing for any or all of its 8088 members at a low cost of insurance against fire, thieves, damage done by bees to others, flood, avalanche, earthquake, and foul brood. Isn't that dusty? [I give it up; but, just the same, I am glad now I threw in those question-marks, as we are now in possession of certain information that otherwise we might not have had, and we will make a strong effort to make our own National as strong financially as those that have government aid. I will insist on this, however, that there is no organization *without* government aid that has "kicked up so much dust" as the National. If you have any evidence to break down this statement, trot it out.—ED.]

STAMP OUTFIT for making numbering-tags at 75 cts., and brass stencils for 35 cents, page 156. Good! that helps. Now please go a step further and tell us what you'll furnish the tags for. A further suggestion: Packing-boxes have printing on them that stands the weather. Why can't you print wooden tags $\frac{1}{8}$ thick the same way? I'd like a lot of them running from 1 to 100. Fastened on the center of the front of the hive, a number means just what it says: at the right the number 25 would mean 125; at the left, 25 would mean 225; and so of other numbers. Higher numbers could have other locations. I've used them

that way successfully; but unless costing less I'd rather have the full numbers printed. What'll you take for such printed wooden tags? Or could you print zinc tags? [We have been furnishing manilla tagboard numbers up to 100—tags immersed in linseed oil—at \$1.00 per hundred. We could furnish the numbered wooden tags $\frac{1}{8}$ inch thick, and the width of a section, for about \$2.00 per 100. They would cost more to print, as we can print the tags in large sheets, and then cut up. We can furnish the plain strips of wood, not numbered, for \$3.00 per barrel. This would be cheaper, and the bee-keeper can do his own numbering with a 35-cent stencil. When these become soiled he could make new at a small expense.—ED.]



Again the warlike shot and shell
Against our kind are hurled;
The long-expected fight is on
That may involve the world.

BRITISH BEE JOURNAL.

The appearance of the *B. B. J.* has been greatly improved lately by a dress of new type.

Active measures are being taken by the Germans to develop bee-keeping in Southwest Africa. Several colonies have been carried there from Germany.

Radium is just now commanding a degree of attention that is in an inverse ratio to its scarcity; but from what we do know of it, it is entirely safe to say it is destined to revolutionize the science of medicine so far as bacteriology is concerned, and add immeasurably to human life and comfort. It really seems as if we were on the threshold of an advance in science that will change for the better all conditions of human life. The exceeding scarceness of this substance is at present the only drawback to a rapid acquisition of knowledge as to what it can and will do for man. But that objection once applied to aluminum; for some of us can remember when it was as valuable as gold, even while we drink tea made in cups of that same metal. A very well-informed writer in the *British Bee Journal* has this to say about it as a cure for foul brood. His last sentence will surely be the hope of all of us.

In experiments made it has been found that the rays of radium have proved fatal to all kinds of bacteria. A great many tests have been made in treating different kinds of germ disease, and in almost every case exposure to the rays destroyed the germs, so that on

trial being made it was proved that they cease to grow and multiply in a gelatine medium. Experiments have been made whereby the rays have been allowed to pass through a hole in a metal disc and strike on a small mass of gelatine containing active germs, with the result that they were developed, *except on the spot where the rays had struck*. This undoubtedly proves that a comb so treated would be sterilized, and that radium may prove able to accomplish a cure of foul brood. I ask no one to accept this as a truism until the experiment has been tried and found a success. All I now plead for is, that, theoretically, it should do what I claim for it. Some of our scientific bee-keepers might be able to bring a small piece of comb, containing active germs of foul brood, under the action of radium rays, and prove if the deadly possibilities of germ or spore would be rendered innocuous. The heavy cost of even the most minute particle may prove a bar to any thing more than this simple experiment; but this wonderful force is only in its infancy, and by and by will become more common and attainable. I hope this is not merely a vain dream!

W

Dr. Miller's remarks about Dzierzon, in Straws, this issue, embolden me to refer to something I read a few days ago in a Spanish journal concerning the venerable bee-master. When all the talk is on one side it is a little disagreeable to attempt to sweep the Atlantic in another direction by way of criticism. The article in question, signed by a man named Weber, probably a German, begins thus:

Some time ago the bee-keepers of other countries had considerable to say concerning a species of idolatry in which the Germans hold Dzierzon. They credit to him all discoveries, all inventions, all progress in modern apiculture; and when, at apicultural reunions, Dzierzon speaks, all, even the most notable, bow their heads before the oracle and are silent.

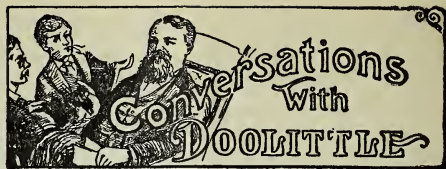
At an apicultural meeting in Breslau, in 1901, Mr. Bassler, editor of *Deutsche Imker aus Boehmen*, made a speech in which he inveighed bitterly against the servile attitude of the Germans concerning Dzierzon, and yet gave him a world of credit for the good he has unquestionably done. The speech is one of the finest I have ever read, but too long to give here. One paragraph concerning parthenogenesis is the most striking of all:

It is claimed that this good gentleman, Dzierzon, was the first to discover parthenogenesis — that particular property that a bee-egg has of producing, without being fertilized, a male bee. I have shown to him that 500 years before Christ, old Aristoteles published this wonder; and that Huber, our great Geneva bee-lover, had, at the beginning of the past century, demonstrated scientifically by anatomy the same thing by the laying bees he sent to Miss Jurine.

Concerning hives and frames he says further:

Likewise, to Dzierzon is attributed the invention of the movable frame. I have shown him that movableness of frames was practiced in France while as yet there was no Dzierzon, who, to tell the truth, did not invent movable combs, and was not himself converted to "mobility" until the square frame was adopted in all parts. Even to-day his frame is but an imperfect one, and his hive only half movable, which even his most ardent admirers do not use.

While all this seems to be true, it is still a greater satisfaction to know that Dzierzon's life is made happier by an overweening fondness on the part of his fellow-citizens than to think that father Langstroth's life was embittered in this country by being so greatly underrated and misrepresented by the very men who should have pursued an opposite course.



ABOUT WINTER STORES.

"I have been reading what you have said about your severe winter in your locality, and have come up from Georgia (by letter) to have a little talk with you, and invite you to come down and winter with us next winter, for we have none of the snow or zero weather which you have in York State."

"I thank you very much, Mr. Brown, for the invitation; but I have so many ties which bind me here that it is not probable I can see my way clear to come. I know I should enjoy your winter very much, for the winters in the sunny South are very pleasant; at least I found it so the winter I was in Arkansas. Yet there is a certain enjoyment up here at the North with our bright coal fires and cozy rooms, in and around which the family gather, bidding defiance to the cold without, that is not to be had in the South. 'Small comfort,' do I hear you say? Well, it may so appear to you; but we manage to keep very comfortable the most of the time."

"I know there are blessings and comforts at the North which we Southerners can not realize; and the most of us are quite willing to be deprived of them in considering *ours* the better. But suppose we proceed to the little talk I wish to have with you."

"I am agreeable. What shall it be about?"

"My bees seem to be getting short of stores, and I am afraid I shall have to feed before April. I supposed I gave them the regulation amount which you advocated (25 lbs.), last fall, but I might have failed in this."

"Perhaps I should have qualified my ideas of winter stores somewhat. I was advocating that 25 pounds of stores should be sufficient for colonies in this northern clime."

"Don't you think bees will consume as much honey in the South from the middle of October to the middle of April as they would at the extreme North?"

"As you put it, I would say that I should estimate it would take more stores to carry bees from the middle of October to the middle of April in the South than it would at the North, but I should judge that bees would winter on less with you than with us."

"I do not understand. Please explain more fully."

"What I mean is this: I should consider that it would take more stores to *winter* a colony where winter held sway for five to six months, as it does here, than where

winter lasts only about two months, as I understand it does in the South. After about the first of March I understand it is *spring* in the South, while we often have six weeks of winter weather after that time."

"Then you alluded to the time the bees are in a partially quiescent state, by the word 'winter'?"

"Yes. When bees begin to breed to any great extent, then is when a great consumption of honey occurs; and if no honey is to be had from the fields at such times of rapid breeding, the stores in the hive are drawn upon so rapidly that starvation often occurs, when the apiarist thought his bees had sufficient stores to last for months, he judging from the consumption needed for the fall and winter months. Hence the wise apiarist has an eye out on this matter, from now on till the flowers give honey in the spring, unless his hives were very heavy in honey the preceding fall."

"But what about the warm weather in the fall we often have when the bees can fly nearly every day, and that after all nectar secretion in the flowers has past?"

"Some seem to think that mild weather with no honey-flow is a trying ordeal on the stores in the hives; but it depends very much on when this mild weather occurs. If in October, November, December, and January, and the bees are on their summer stands, I have found that here, in Central New York, they consume far less stores than they do in cold weather, as at this time there is no disposition toward brood-rearing, and the mild weather does not call for so much honey being used as 'fuel' as does the cold. At such times colonies outdoors consume but little more than do those in the cellar, or about a pound a month, while with very cold weather, as the present winter has been, the colony outdoors requires from double to treble that amount, even when wintering perfectly."

"I had supposed that in your cold climate bees used five or six pounds a month."

"Oh, no! not when wintering perfectly. But let any colony become uneasy from any cause, and they will go to eating voraciously, and from this brood-rearing will result in nineteen cases out of twenty, and the consumption will increase from the average of from one to three pounds a month to from five to eight pounds a month, generally resulting in that colony dying before April, or its vitality becoming so exhausted so that spring dwindling will be the result. I suppose with your short winters you do not have this state of affairs."

"Not to any such extent as you Northern bee-keepers do; but we have a large consumption of stores after brood-rearing commences."

"Undoubtedly this is so, on the same plan it is with us in April and May, when our healthy colonies begin to rear brood rapidly preparatory to increasing for the swarming season. And I judge you are as pleased to see brood in February and

March as we are to see it in April and May."

"Yes. But what am I to do for stores before the flowers open which give a secretion of nectar?"

"It is generally better to know that each colony has enough in the fall to carry it over till nectar is expected in the spring, even if you had to allow forty pounds for each colony; but if, from any cause, the bees do not have enough when brood-rearing commences at the beginning of the season, it is well to feed, for there is no time in the year when it pays better to feed than after the bees begin to rear brood and have general weekly or daily flights; for the feed so used not only preserves the life of the colony but helps much by way of stimulating the colony to greater efforts than would otherwise be made; and if this stimulation brings your bees on the stage of action in the right time for any honey harvest you will be doubly paid for all feeding you may feel obliged to do."



The Ohio foul-brood bill, spoken of on page 172, has passed the House, without a dissenting vote. It now remains for it to get through the Senate, and finally receive the signature of the Governor. If the bee-keepers of the State do their duty in writing their Senators it will pass the Senate.

A CORRECTION.

REFERRING to the next to the last Straw on page 168, Dr. Miller says he was not objecting that the thing could not be done—giving a larger proportion of young bees to a nucleus—but that he was interposing in behalf of the beginner because we had not told *how* it was to be done. In my footnote telling how, I spoke as if the doctor did not know the kink, when a more careful reading would have shown that he did. I deem it but right and fair that I make this explanation, although the doctor does not expect or ask it.

SALISBURY'S AUTOMATIC WINDMILL ELEVATOR.

ELSEWHERE in this issue I have referred to Salisbury's elevator that runs by wind power, works for nothing, and boards itself. Since that article went to press, the following letter shows that the thing is a success in every way:

I have a "rig that runs." "It is built to run, and it does it"—not an auto but an elevator by wind energy stored up by windmill. There is just one drawback, now that we have dry sand—"dusty." However, I

have built an opening to the outer air from the top of the upper bin of sand so there is a draft over the top of sand to the outer air. In time we may get the dust all out.

There is "nothing to watch but the brake." Step on the elevator; pull rope to valve at bottom of sand-bin. Take off brake. She moves. Go to top floor. Pull brake-rope. Step off. Pull valve rope at bottom of bucket. Walk around. Step on elevator. Take off brake. Down we go. Fine. F. A. SALISBURY.
Syracuse, N. Y.

WINTER LOSSES.

PLEASE send in postal-card reports of how the bees are wintering in your locality. It is important to know this, as it will have some bearing on the price of honey. We will give a summary in our next and subsequent issues. We fear heavy losses in some localities. In York State heavy losses are reported already. Make your reports brief—not over three or four sentences—or we can't use them.

RETAILING CANDIED HONEY FROM SQUARE CANS WITHOUT REMELTING; A VALUABLE KINK OF THE TRADE.

MR. JESSE WARREN, who has charge of our retail-honey department, has developed a plan by which honey that is candied solid in square cans may be removed bodily, cut into one-pound bricks, and wrapped in waxed paper just as a grocer wraps up bricks of creamery butter. We have taken some photos; but before I can get these before the public the matter will be somewhat out of season, so I give the essential principles now. His *modus operandi* is this:

He takes a can of honey that he *knows* is candied *solid and hard* to hold its shape. He then takes a pair of tinner's snips, cuts the tin down the sides, and then pulls it off from the cake of honey. He now takes a piece of iron or steel wire, about No. 20, or a small strong fishline a yard long. To each end of this is secured a wooden handle. The cake of solid honey is laid on its side on a board, when he slips the wire under the cake, back, say, two inches. He draws it around the cake, crosses the two ends of the wire, grabs the handles, then pulls slowly, when the wire passes easily and nicely right through the whole cake. A paddle or thin-bladed knife is then inserted in the crack where the wire passes, cleaving a slab of honey two inches thick, the size of the top of the square can. Another slice is taken off in a like manner. These slabs are then resliced the same way into one-pound bricks. They are next wrapped in paraffine paper. Another paper wrapping with suitable label, and directions how to handle, makes a very neat and pretty package that costs almost nothing. The only expense is the sacrificing of the can. But this is offset by the saving of the labor of melting the honey to get it out, and then recandying after it is poured into paper bags.

The wire method of cutting originated with Mr. Warren, so far as I know. It must be remembered that a knife will not cut a solid cake of candied honey.

While we have used alfalfa honey for cutting up into bricks, we can use some clover. Try it and be convinced. A little later on I will have illustrations showing more exactly the method of procedure.

As I have before stated, all candied honey should be sold to the local trade, or to the trade that knows you *personally*. After you have once introduced it, it will sell of itself. Paper-bag honey sells without any effort among our employees. Solid alfalfa-honey bricks, put up in the manner I have explained, sells equally well. Try some, then go out among your friends and neighbors and see how it will sell.

Honey in barrels that has candied solid can be treated with a wire, and cut into all shapes and sizes. Loosen the hoops, pull off the staves, then slice the honey with a wire just as you want it. I should, perhaps, explain that, when the wire passes through the honey, the cake will cleave to the larger piece; but a thin-bladed knife or paddle will effect a separation very easily *after* it is cut with the wire.

HOW TO NEARLY DOUBLE YOUR MONEY.

I hold in my hand a sample of candied honey the size and shape of a two-inch cube. This was cut with a wire as explained just above. It is wrapped in paraffine paper, and retails for a nickel. It has a very neat and toothsome appearance; and the package—well, it does not cost any thing comparatively. One solid chunk of candied honey, as it comes from a square can, will furnish 160 of these cubes, which, at 5 cents each, will make the entire contents net the bee-keeper \$8.00, or 13½ cents per lb. for honey costing 6 or 7 cents. The time of cutting up the chunk from a square can, and wrapping, will occupy about three hours. If this is done on a rainy day, or by the children, the expense will be nominal. Try the experiment, and report results. You will find it (the honey, I mean) goes off like hot cakes.

GOVERNMENT AID FOR APICULTURE.

WE have been aware for some time that the United States Department of Agriculture was anxious to do a great deal for the apiarian industry of this country, as, indeed, we believe it is disposed to do for every branch related to the tilling of the soil; but naturally, since there are so many *great* agricultural industries, such as cotton, corn, and wheat raising, the stock industry, and all of those matters upon which these depend, such as the development of irrigation, methods in forestry, and the improvement of the soil through the use of fertilizers, our own branch has, in a great measure, had to be patient for its due recognition. We have also been aware that Mr. Frank Benton, charged at the Department of Agriculture with attention to correspondence relating to apiarian matters, has never, during his connection with that Department, allowed to pass unutilized an

opportunity to push forward the claims of apiculture, and that, little by little, some progress has been made, notwithstanding the funds for any work in connection with apiculture have been next to nothing.

We are glad to be able to say, however, that far more good to the industry at large has resulted from the Department work thus far done than most bee-keepers realize, so quietly has it gone on. Several Department bulletins on apiculture have been issued, and have reached a wide circulation, especially among those who before knew nothing of the existence of bee literature. Numerous editions have been called for, and great general interest in the pursuit has thus been aroused. Much has been done through the prestige of the Department to combat and put down erroneous ideas regarding the adulteration of honey. The Department has lent its aid toward securing needed foul-brood legislation in various States, and also enlightened decisions in legal controversies involving important points and precedents affecting apiculture. The needs of the industry in various sections of the Union have been under consideration at the Department, and further plans to benefit each section have been matured. We are assured that these would long since have been in process of execution had not the constantly increasing demands for direct work against injurious insects been so great that the funds appropriated for the Division of Entomology could not be made to reach beyond the most urgent needs for remedial measures against serious damage to staple crops. But a new era has opened in this line of work; and legislators, in view of the great benefits that have come through it, are beginning to appreciate the need of greater liberality toward it.

In the matter of apiculture at the Department, still another distinct line of progress has been carried forward which will count for much in the future; and that is, the gaining of a proper recognition of the just claims of apiculture, and the adjusting of its status to the other branches under the protection of the Department, coupled with such appeals for proper financial recognition as must result eventually in the substantial grants so much desired, with such liberty of action as is necessary to the accomplishment of substantial work for the advancement of apiculture. The field in which careful experimental work may be undertaken on a scientific basis in the interests of apiculture is so wide that there is vast opportunity for years of such work; and the efforts to secure permanent and suitable recognition should look to a continuation of the same—to permanence in a section or division of apiculture under governmental auspices, the head of which, with all assistants, should receive their appointments under civil-service regulations solely on the basis of their fitness for the work.

Viewing the matter in this light we have taken occasion to urge upon our represent-

atives in Congress that the recommendation of the Honorable Secretary of Agriculture in his last annual report, as regards the Division of Entomology, should receive the support of every member of Congress who had our interests at heart. We refer to the very urgent request which the Secretary made at the close of his report for 1903, to the President of the United States, "that the Division of Entomology be developed into a Bureau, in accordance with the estimates which he had made, and the recommendations of the Chief himself, of the Division of Entomology." These recommendations contemplate numerous sections or divisions of the work, each under an expert in his line, among others a section devoted to apicultural investigations with a distinct sum of money for the carrying-on of experimental work and the publication of the results of such work. We can not conceive that there is in the whole length of our land a single bee-keeper but that would welcome such an advanced step in connection with our beloved pursuit. It is something which should be heartily supported irrespective of personal considerations, for the building-up of such an institute or division devoted to investigation of any or every topic of importance connected with our pursuit, is for all time—at least, all will sincerely hope that such will be the case, and that those who come after us will commend our judgment in building it upon such broad lines. We think, therefore, that every political or personal difference should sink into insignificance in connection with this matter, and that, to the legislators of whom we would ask this recognition, we should present a unanimous request and a united front, which should cause them to think seriously that we are in earnest in our desire for recognition beside the other respectable industries of the country.

Viewing the matter in this broad light we feel certain that the mass of bee-keepers who read this will not hesitate to urge upon their representatives in Congress a support of the measure, in connection with which we consider ourselves extremely fortunate in having so able and liberal an advocate as the Secretary of Agriculture himself, the Honorable James Wilson, namely: "that the Division of Entomology of the United States Department of Agriculture be made a Bureau of Entomology, with a Division of Apiculture."

No matter, therefore, how humble you may consider yourself, to whatever political party you may belong, however slight you believe your influence to be, drop a line at once to your Representative and one to each of your Senators in the United States Congress, stating to them that you would be glad to have the above recommendation of the Secretary of Agriculture carried into effect. The bill is now under consideration, and such a deluge of letters and cards should be received by members as will show them that we are deeply interested in the matter.

GLYCERINE IN HONEY TO PREVENT GRANULATION.

WE have been trying small percentages of glycerine in honey to see if it would prevent candying. A certain lot of clear honey was set aside. Some bags had honey without glycerine; in others there was one per cent, in others two per cent, and in others three per cent. They were then put in a room where it freezes very hard. Now for results: There *was not one of those samples*, not even those without glycerine, that showed any trace of candying; but it was very cold during the period mentioned, and the honey, although perfectly clear, was almost as solid as a brick. It appeared to be like some very thick tenacious crystalline taffy. We brought it inside and let it warm up, when it became as liquid as ever. It begins to appear that honey, in order to candy, must not have too cold nor a too continuous cold temperature; a warming-up and then a freezing, another warming-up and another freezing, and so on, seems to be necessary to hasten the process. But above all it is very important to have a little candied honey inserted in every lot, on the principle that a little leaven leaveneth the whole lump.

My brother is making some experiments at our Chicago office along the same line and will report soon. But he says that the two-per-cent glycerine imparts to the honey a very slight taste of the glycerine; that our office people could detect tintured samples almost unerringly. More anon.

USELESS PATENTS ON HIVES AND THEIR APPLIANCES; THE MAN WITH THE FLYING-MACHINE THAT DIDN'T FLY.

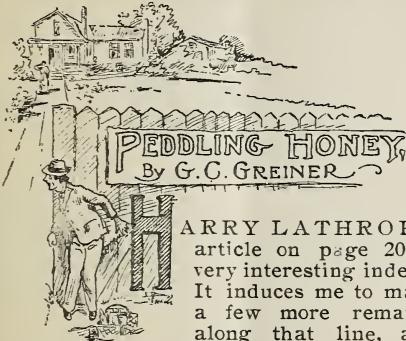
VERY recently a customer of ours wished to know if a certain idea had ever been patented. As we have copies of all the patents that have ever been issued on apiculture on file in our office, the same being properly indexed, I made a general search; but the invention was of such a nature that it probably could not be fully described in an index, and I therefore found it necessary to go over all the patents one by one. While I did not find what I was after, my search revealed one fact which I think would be interesting to our readers, and that is this: Nine-tenths—yes, I am safe in saying ninety-nine per cent—of all patents relating to bee culture have been issued to men—I can hardly call them bee-keepers—who have had almost no practical knowledge of the general principles covering hive-construction and the general habits of bees. The great majority of these useless inventions, even if they would accomplish what was expected of them by the brilliant(?) geniuses that evolved them, would have absolutely no sale, for the simple reason that the dear public is not going to pay for something for which it has absolutely no need. Let me give a few illustrations of some of the wonderful(?) inventions.

One inventor got up a hiving-apparatus

that consisted of cogwheels, shafting, chain gearing, and elaborate framework, for dumping a swarm, after it has clustered, into a hive. The whole apparatus would cost a hundred times as much as any swarm is worth. And, just think of it! here was a man who had the temerity to pay out \$100 for a patent covering something he supposed would have a demand. Was he after glory or money? And then the devices that were gotten up to catch the moth-miller! The amount of brains and time that has been spent on this one subject alone is enough to have made a nice little fortune. We have something like 1500 apicultural patents in our office, which number comprises the entire list. Probably a fourth of them is devoted to moth-traps—say there are 300; then let us estimate \$.00 as the cost of each patent, or \$30,000. This amount went into the hands of patent attorneys. Besides this is loss of time, which, if it had been spent behind the plow-handle, would have made another fortune.

It does seem as if the general government ought to have an expert to pass on the practicability of some of the subjects that come up for patents. This would afford protection to some fools who need to be saved from themselves, and save thousands of dollars; but it might also throw thousands of quack attorneys out of business.

If there were an expert in each department who would rule out certain inventions that have no value, it would save good dollars, wasted efforts, and blighted hopes. But the government does do something in this line to a certain extent. For example, some years ago a poor deluded chap, poorly dressed, a typical inventor (in appearance), desired to see A. I. Root in private. An ordinary office would not do. Somebody might be listening over the transom, and the walls might act as a sounding-board so that the valuable secret that he was about to impart might be given to the world. No, he must go out into a ten-acre field. Much against his will, A. I. R. finally yielded, and then the fellow drew from his pocket some well-soiled blue prints showing a flying-machine. He had applied for a patent; but the examiner refused to consider his application unless he would make a practical working model. This would cost hundreds and perhaps thousands of dollars. So our friend sought out some one with means to help him get up a model that would demonstrate to the government that his ideas would work; and would A. I. R. help him? He would give him a big interest in his invention, and he *knew* it would work. A. I. R. saw at a glance that the man did not understand the first principles of philosophy, and could give him no encouragement. We never heard of the invention further; and the probabilities are the government refused to recognize it. If the same principle had been applied to some of the bee-inventions, half of the patents that have been issued would have been barred out.



HARRY LATHROP'S article on page 20 is very interesting indeed. It induces me to make a few more remarks along that line, and give a slight touch of the other side of the picture.

The editor says in his footnote, "We are not all born salesmen." This is true, and it applies to my case to the full meaning of of his assertion. Being naturally a little bashful, not easy to make friends among strangers, I have no natural inclination for the business of traveling salesman; still, if I encounter the inevitable, if I am compelled to take that *role* in life's drama, I can do quite an amount of "blabbing," which is an essential feature of a successful salesman.

For the last two or three years I have sold all my honey, which I did not sell to neighboring stores and groceries in larger quantities, by going from house to house, selling a can or more at a time; and this experience enables me, although I have never been so completely disappointed as he reports, to sympathize fully with the writer of the above mentioned article. As an encouragement to Mr. Lathrop I will say, "Don't give up on account of one day's



disappointment; but try again." Peddling honey has, like every thing else, its ups and downs; we don't always strike it rich; some days it may seem like terribly steep uphill business, while other days may roll

in the money by the handfuls. As an illustration, and a proof that the latter sentence is almost literally true, let me give you one day's experience.

Late last fall I chanced to take a trip to Niagara Falls with the intention of making a display of my goods at the city market. The way business is transacted here is very informal. One of the streets running at right angles to Main Street is set apart as a gathering-place of producers and consumers, to transact a general market business. Here the farmers from miles of surrounding country, with their various loads of produce, comprising any thing from a dozen eggs to a load of hay or grain, drive in in the morning, back up against the sidewalk, and make a display of their goods, awaiting purchasing callers. There are no reserved seats; but the rule is that whoever comes first is served first; that is, the first comer takes his stand next to Main Street; the second next, and so on, until the street is lined on both sides for a considerable distance. The advantage of being at or near the head of the street is plain to be seen. Any customer who finds what he intends to purchase is not very likely to travel the whole length of the street just to see what the rest have to sell.



"At first things, looked a little gloomy."

When I arrived at the place it was rather late. The line of would-be sellers was a long one, and, by good rights, I belonged with my rig way down at the lower end. This, however, did not suit my fancy. I turned around at the lower end, and, looking for a chance when driving back, I found a little gap near the head between two farmers' wagons, almost wide enough for my rig. At my request one of the men, thanks to his good nature, moved a little to one side, which gave me a chance to back in between. Thus stationed I made my display of goods, which consisted of extra nice extracted honey in pint and quart cans, all liquid and sparkling, and some fancy sections of comb honey, and awaited results.

At first, things looked a little gloomy. Purchasers did not flock in as I had hoped, until after some minutes of patient waiting. One passing lady, in looking at my honey, asked: "Is your honey *pure*?" The reply I made must be imagined, for it would fill more space here than the editor would be

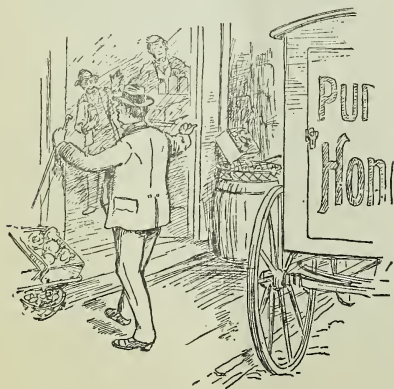
willing to allow. But let me emphasize—here is where the blabbing came in. In answering her question I delivered a good half hour lecture in less than two minutes, trying to convince her of the purity and all the good points of my honey. In the meantime, passing people had stopped to listen; and by the time my lady friend was ready



"Is my honey pure? now listen!"

to buy one of my quart cans I had quite a crowd around me. To cut the story short, for quite a few minutes I handed out cans, mostly quarts, as fast as I could make the change, many of the purchasers promising to buy more the next time. I attended the market, if the honey proved what I had recommended it to be.

When the market closed, at 11 A. M., I had a few cans left. With these I drove to Main St. and tied my horse in front of one of the stores, where I had a little business to transact. A few minutes later, while I



"Hello! where's this honey-man!"

was conversing with the storekeeper inside, some one opened the door and inquired:

"Hello! where is this honey-man?"

After introducing myself he requested me to show him what I had to sell. It did not take very long to convince him that I car-

ried the genuine article; and, what pleased me still more, was the fact that he ordered two cans to be left at the corner drug-store across the street.

When I delivered the cans they were closely scrutinized by the clerks and some other parties who happened to be present, and one of the clerks asked:

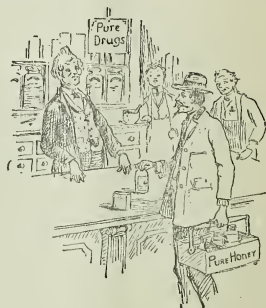
"What guarantee have we that this is pure honey?"

Here another lecture-like conversation, too long to be repeated, took place, the substance of which may be concentrated in my reply:

"First, pure honey and my name and address are on every package; and, second, back of this is the New York State law that prohibits all honey adulterations."

Before I left the place I sold two more cans to those other parties.

After this last deal I had two quart cans and five or six pint cans left; and, being well satisfied with my two or three hours' work, I started for home. On my way I had to pass the hardware store where I had purchased my honey-tanks. I am well ac-



"What guarantee have we?"

quainted with one of the proprietors. He always seemed to be quite interested in bee-keeping, and ready for an occasional bee-talk. Not expecting or intending to make any sales I stepped in to have a few minutes' chat with my friend. After exchanging the usual salutations of the day I said, "Mr. N., would you like to see what I am selling?"

"Certainly," was his reply.

I reached back for my sample-case, which I had taken in and set a little to one side, and placed it on the counter. The result was most gratifying to myself. It brought out many exclamations of admiration. One of the nearby lady clerks said: "Oh! isn't this honey fine? I guess I'll take a can of it."

Then the proprietor chimed in:

"Yes, this is nice. I am not keeping house myself; but I'll take a can to make my landlady a Christmas present."

Another clerk, just passing on his way to dinner, looked at the honey, handed me the cash, and took one can home with him.

The few pint cans I had left when leave-

ing the store I sold at a grocery before I reached home, and this closed a profitable day's peddling honey.

A great help in selling honey on the road is a proper traveling outfit, which enables us to present our products in clean, neat, and inviting appearance. I know from ex-



perience that at least one-fourth of my sales can be directly traced back to this feature. A full description of my outfit, with illustration, I will give later on.

La Salle, N. Y.

F. A. SALISBURY.

The Deal'r in Bee-keepers' Supplies; how he Makes Use of the Automobile for Business and Pleasure.

BY E. R. ROOT.

We have in contemplation a series of articles showing the faces of some of the dealers in bee-keepers' supplies representing various manufacturers in the country. Many of the names of these dealers are

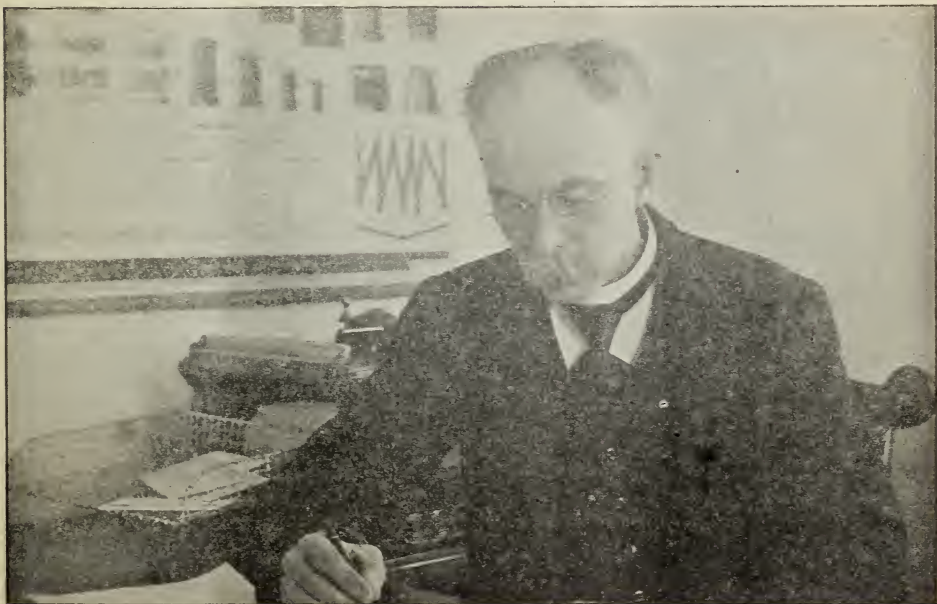
like household words in bee-keepers' homes; and, naturally enough, we should like to know them a little more intimately, and so we propose giving you a look at their faces, and, in some cases, their place of business.

I have already introduced to you Mr. F. H. Farmer, of Boston, and now take pleasure in presenting Mr. F. A. Salisbury, one of the largest dealers in supplies in the United States. He is a good fellow, a splendid business man, very systematic in every thing he undertakes. In office paraphernalia and office fixtures he has every thing down to a science. His place of business is located in the residence portion of Syracuse, one of the pleasantest cities in Central New York; and when business is not rushing he finds pleasure and diversion in driving a horseless carriage. Just before going to Syracuse I wired Mr. Salisbury that I would be there on a certain train. Much to my surprise he met me at the station and escorted me to his automobile. The snow was deep, and it was then snowing furiously.

"My, oh my!" I said; "you are not going to try to take me these two miles right through this snow to your home in that thing, are you?"

"Why not?" said he with a smile. "No weather is too bad to keep it indoors. Get in."

I did so. He had the tires of the rear wheels wrapped around with chains so as to keep them from slipping. Well, it would surprise you to see how we did spoil those snowdrifts. He dodged like an old experienced chauffeur between trucks and street-



SALISBURY AT WORK IN HIS OFFICE.

cars in a way that made the hair of an old driver of this kind of vehicle stand on end.

"My goodness, Salisbury! you just barely missed that heavy truck-wheel. I should not dare do it."

"Pshaw!" said he; "I do it every day."

"All right," I said; "I can stand it if you can. But say, Frank, how long have you had an automobile?"

"About six months. Don't you remember writing me, *ordering* me to get a machine? You see I obeyed orders."

Then I remembered that, several months before, Mr. Salisbury wrote that the heavy business he was having was wearing on his health, and that he was getting nearly tired out. In a joking way I ordered him to get an auto instanter and make some spins outdoors, never suspecting I could get a bachelor like him interested to the extent that he would carry out my instructions to the letter. He went right up to the garage of the Olds machine, for I had said that was a good one, and gave an order. To make a long story short, he got one of the latest machines, and here he had been driving it some six months, without any trouble with it whatever.

"How did that happen?" I said.

"Why, you told me to study the book, and I did."

He tinkered and fussed with it until he came to understand its mechanism thoroughly; and instead of waiting until something was out of order on the road, he saw to it that every time he started out it was in proper condition; and the result was, whenever *he* was ready to go, *it* was. He had been

using it in all kinds of weather, both for pleasure and business. He could go down to the city or to the depots or express offices in about half the time it took him to go on the street cars. On a rush order he could take small packages with him, deliver them at the express office, go to the bank, and do various errands, in a time that would leave the old way clear in the shade.

"Look here, Frank," I said, as we approached his house; "you do not propose to go up that hill in all this snow, do you?"

"Why, sure."

Mr. Salisbury's large warehouse is up on one of those Syracuse hills. He applied the power, and the little machine walked up it as if it had a good deal of reserve power left. He ran it into his auto-shed, shut it, and we went into the house. There was no horse to put out, no climbing up a loft to shove down hay; no oats to feed, no water to carry, no stable to clean. It was down to zero, but the cooling-coils of the machine had been supplied with salt water to prevent bursting the pipes. Before he went into the auto-house I asked him to let me take a photo of him just as we came in; and there he is, you see, knee-deep in the snow.

But our friend Salisbury, besides being an expert bee keeper, is a genius in several respects. He is a rapid calculator; and one of his diversions is to take a complicated set of figures, either in multiplication or addition, and give the result in a twinkling. He loves machinery, and that is why the automobile was to him what water is to a duck. You will see he has a wind-



HOW SALISBURY NAVIGATES THE SNOW WITH HIS AUTOMOBILE.

mill on top of his warehouse, in one of the photos here shown.

"What is that for?" I asked.

"That is to run my elevator."

"Run an elevator!" I exclaimed; "what you do when the wind does not blow?"

"I have got that fixed, or will have very soon."

He went inside and showed me a sort of grain-elevator which he had rigged up to carry sand from the basement clear into the fourth story of the warehouse. The sand is dropped in a large bin, and he has a connection by means of a rope so that 100 lbs. or so of sand can be dropped into a counter-weight box at any point where the elevator may be located. The elevator is so balanced that, when this box is empty, it will go down by its own weight. When he desires to carry a load he pulls the little rope, and that lets a quantity of sand run into the counter-weight box until the elevator load is counterbalanced. The brake is released, when the load, man and all, is carried automatically to the desired point, when the brakes are applied and the load taken off. When he is ready to go down, the same rope empties the sand out of the counter-weight box, and, of course, the elevator drops of its own gravity. Whenever the wind blows it stores enough sand in half an hour to run the elevator for a day's use.

"Why don't you use water?"

"It freezes in my warehouse," said he.

"I had to have something that would not freeze—don't you see?"

Mr. Salisbury did have at one time the elevator rigged direct to the windmill; but

he contrived to do most of the lifting when the wind blew; but when business was pressing it was very annoying to be without power. Now he stores his power whenever the wind blows, in a large bin in the fourth story, and lets it out by pulling a rope just as he wants it. When I was there the rig was not in operation; but I have since heard from him, saying it was coming out all right.

"But, Salisbury, this must have cost you a whole lot of thinking; and wouldn't it have been cheaper for you to have an electric motor so that you could 'turn on the juice' whenever you desired to operate the elevator?"

"Yes, but that would affect my insurance; besides, the cost of the current would be something. Sand will not freeze, the mill works for nothing and boards itself, and will not set any thing afire."

Another of Mr. Salisbury's hobbies is electricity and steam heating. He is planning to make a storage battery to run the lights at the house. The windmill will run a generator that will store a current in the aforesaid battery.

Mr. Salisbury told me the size of his building, and how many carloads he could store away and have ready so that he could pick out any package, but I have forgotten the figures. The rooms are divided into alleyways, and goods of a kind are kept by themselves. Instead of having goods piled on top of themselves, and mixed up, requiring handling four or five times before they are actually given to the drayman, they are handled but once after being placed on the floor.



SALISBURY'S WAREHOUSE WHERE HE KEEPS HIS LARGE STOCK OF BEE-SUPPLIES.
(View from the house.)

Let us take a peep at his office. There he is, sitting down at his desk busy at work. The room is heated with a steam coil, the pipe running from his dwelling, some hundred feet or more, under ground. He has all the modern office conveniences, and sometimes has a pretty stenographer to help him out (he did not have one when I was there); and that reminds me that our friend is a bachelor. He is a good fellow, is honest, well fixed financially, and a real genius. Mr. Salisbury objected to having his picture taken; but kodak fiends are relentless, you know; but finally, after all sorts of persuasion and threats had been hurled at him, he sat still while my kodak clicked from a near-by desk. We then went out of doors and took some pictures of his warehouse.

"But, say, Mr. Salisbury, where is that immense house-apiary that you had the last time I was here?"

"Torn it down."

"What for?"

"Bees died too much in winter in it. Say," he said, looking at me, "I wish you would take that picture of that house-apiary of mine out of the next edition of your A B C book. I am afraid some other man will be fool enough to make one like it, and then blame me."

I said that friend Salisbury is a bachelor. I purposely emphasized the fact; but he is to be pardoned, for he has one of the most delightful mothers that any man ever had. Then he has a married sister across the way, just as good, so that he does not lack the training that naturally comes from one of the gentler sex. My friend may not

thank me for saying so much about his family history; but I can assure him I do not mean him any harm. I am only thinking that *some* time I can wish him more joy and happiness. If our bee keeping sisters *only knew* what a whole-souled fellow he is — well, I will not complete the sentence. I may get into trouble as it is.

SCIENTIFIC NAMES.

Rules Governing their Use and Application; *Apis Mellifera* Linn. the Correct Term.

BY PROF. FRANK BENTON.

In GLEANINGS, Vol. XXXII., No. 1, for Jan. 1, 1904, the question is raised, on page 11, whether *Apis mellifica* or *Apis mellifera* is the proper term to use as the scientific name of the honey-bee. The editorial comment is as follows:

Apis mellifica is the term used by Cowan and Cheshire in referring to the honey-bee, and by Prof. Comstock, of Cornell, in a recent work on entomology. The same term is also recognized by the great Century Dictionary, the International, and the Standard. The only authority that I have run across so far that uses *Apis mellifera* in a late work is Prof. Cook. I can not now find Benton's work; but my impression is he uses *Apis mellifica*. Either is right, but the first is more common.

As my own book (Bulletin No. 1, n. s., Division of Entomology, "The Honey Bee,") was the first work on apiculture, so far as I am aware, to use the term *Apis mellifera*, I may be allowed to explain the matter.

Regular rules adopted by the international zoological and botanical societies govern the giving of scientific names to an-



SALISBURY'S WAREHOUSE. VIEW FROM THE STREET.

imals and plants, and the retention of such names. These rules relating to the names of animals (including, of course, insects) are known as the "Canons of Zoological Nomenclature;" and all recognized authorities in zoology conform in the main to these rules, although in some of the minor points there are differences of interpretation of the rules themselves or of their application. Those of the rules which pertain especially to the case in hand read as follows:

XII. The law of priority begins to be operative at the beginning of zoological nomenclature.

XIII. Zoological nomenclature begins at 1758, the date of the tenth edition of *Systema Naturæ* of Linnæus.

XIV. The adoption of a "statute of limitation" in modification of the *lex prioritatis* is impracticable and inadmissible.

XV. The law of priority is to be rigidly enforced in respect to all generic, specific, and subspecific names.

Whenever a worker in the field of zoological science discovers a form of animal life which differs in some essential particular from all other known forms, and which, therefore, can not be recognized by comparison with any published description as a certain genus or species, he is entitled to give the new group a family name, a generic name, or a specific name, as the case may warrant. His own surname is always attached, then, to the name of the group in question as the original describer of the group and the authority for the name. The first specimen thus described is known as the *type* specimen. Actual publication (putting in print) of the name with such a technical description of the object as will enable others to recognize and determine exactly the family, genus, and species of a similar specimen, is the only proof which is accepted of the right of the name to remain. It is expected that a student of a given group of plants or animals will familiarize himself with all of the species that have been described in that group, or at least with all that are likely to come within his range. But some specialists, less industrious than others, do not take the time and trouble to look up all of the described species of a group. They simply name and describe whatever seems new to them. Thus the science is encumbered with synonyms which, sooner or later, must give place to the earlier-published names when some careful investigator points out these. (See Rule XV. above.)

Now, it happened that the great Swedish naturalist, Linnæus, described the honey-bee in 1761 under the name *Apis mellifica*, and published this description. All down through the years writers have used this term, although some at different periods endeavored to introduce a change. The name *mellifica* prevailed, however, in the main, although the modern rules for scientific nomenclature were not formulated (or at least not adopted) till the congress of botanists, held in Paris in 1867; and their more definite form now governing in this country was not adopted until 1886. But in 1896 an indefatigable worker in the field of insect life, Prof. K. W. von Dalla Torre, of Aus-

tria, published a catalog of the known *Api-dæ*, or bee family, this being Vol. X. of his great work, "Catalogus Hymenopterorum." Dr. von Dalla Torre had unearthed in an old volume an earlier description of the honey-bee than that published under the name *Apis mellifica* by Linnæus in 1761. Oddly enough, the older name and description were by Linnæus himself in the tenth edition of his *Systema Naturæ*, 1758. Here the name *Apis mellifera* was given.

Considering the vast field covered by Linnæus, and the great number of scientific names which he bestowed upon plants and animals in his work of bringing order out of the existing chaos of scientific nomenclature, it would not have been surprising had he, three years later, overlooked the fact that he had already named and described the honey-bee. I do not know, however, that any testimony bearing on this point exists. What seems more likely is that Linnæus merely desired to change the name because he had come to the conclusion that *mellifica* (honey maker) would be more appropriate than *mellifera* (honey-bearer). No law of zoologists interfered then with such a change. It was merely a question as to whether scientific writers would adopt it or not.

But under the present rules of zoological nomenclature which are quoted above, it is plain that the name published in 1761 had to give way for the earlier published name, *mellifera*. It is equally plain (Rules XII. and XIII.) that no older synonym, even though a hundred might be found, could now or hereafter replace the name *mellifera*. As a matter of fact, a dozen or more writers (Aldrovandi, Moufet, Swammerdam, Réaumur, etc.) had used the name *mellifera* for the honey-bee before 1758; but Rule XIII. bars the name of each and every one of them from standing now as the authority for the specific name *mellifera*.

It is further seen that the change from *mellifica* to *mellifera* was not one adopted arbitrarily nor at the whim of any person, but that the present name is one which takes its place as the result of the application of rules now universally recognized—rules which were adopted only after most careful consideration and criticism by the foremost biologists of the world. As such it must and will be generally accepted whenever known.

For my own part I prefer the specific name *mellifica*, believing, as I do, that bees do really *make* honey; for surely the product when they have finished their work is very different from the raw nectar carried into the hives. The carrying or bearing is but incidental to the process of making the honey and securing it for their stores. However, this is not a matter which is decided by fashion, individual taste, nor precedent as to present usage. The settled rule makes it clear for all, and but one of the two terms can be correct. Cowan and Cheshire, cited by the editor of GLEANINGS, wrote their works on apiculture before Dalla Tor-

re pointed out the earlier name and description. Prof. Comstock and the authors of the terms in the dictionaries had not happened to notice the change, or else they had not looked into the reasons for it. A comparison of the facts just mentioned, with the laws of nomenclature quoted above, shows that we have no other way than to accept as valid the name *Apis mellifera*. And actually we find that specialists in hymenoptera, both in this country and in Europe, who have occasion to mention the honey-bee by its scientific name, use the term *mellifera* and not *mellifica*.

After a careful examination of this subject I adopted the scientific name *mellifera* in the third edition of my "Manual," which appeared in the early part of 1899, and a brief statement of the reason was given by me in the *American Bee Journal* for July 20, 1899, page 456, and also in the *American Bee-keeper* for July, 1899, page 128. A year or so later Prof. A. J. Cook, when revising his "Bee-keepers' Guide," for an edition which appeared in 1900 or 1901, wrote to this Department to learn our reasons for the change in the scientific name of the honey-bee. The matter was referred to me, and I gave a full explanation with the references to the publications. This information he made, later, the basis of an extended article on the subject, which was published in the *American Bee Journal* for June 13, 1901, page 372. Prof. Cook also adopted the name *mellifera* in the next edition of his book.

U. S. Dept. of Agriculture,
Washington, D. C., Jan. 22, 1904.

SECTIONAL BROOD-CHAMBERS OR SHALLOW HIVES.

Methods of Management.

BY ARTHUR C. MILLER.

On page 23 Mr. F. Greiner writes on the *sectional-brood-chamber* hive. The editor follows with a footnote on *shallow hives*. This is confusing.

A sectional-brood-chamber hive may have two or more sections, and may have frames of any depth. It is the habitual use of two or more chambers that is concerned, not the depths thereof. In practice it has been found best to use sections about 5½ inches deep. In "shallow" hives, so called, 7½ inches seems to be the limit, and with such but one chamber is, as a rule, used for the brood-nest. Because two of these *may* be used does not necessarily make it a "sectional-brood-chamber" hive as that term is understood by the advocates of them.

Mr. Greiner is usually so very thorough and careful that I felt sure he must have discovered some vital defect in sectional hives; but on careful perusal of his article I was surprised to find that the fault seems to lie with him.

Certain general methods of management are in use with all single-chambered mov-

able-comb hives of whatever depth. To reap the advantages of such hives over the ancient boxes, we found it necessary to devise and use some such methods. Mr. Heddon leading, and others following, believed that these methods involved too much labor and took too much time. To lessen these difficulties Mr. Heddon devised his sectional hive and *evolved a system for it*.

With the sectional hive it is a system of manipulation of "chambers" or "sections." With other hives it is a system of manipulation of combs—two radically different things. With sectional hives, combs are *not* to be removed except in rare instances (as in looking for disease or for study). With other hives the comb is the unit of manipulation. Mr. Greiner, in common with many others, has mixed the two systems, trying to manipulate combs in sectional hives. The result is, of course, disastrous to his hopes and enthusiasm.

Sectional hives were devised to minimize manipulation; to save time; to reach ends quicker or more perfectly than was possible with other hives. But there are sectional hives and sectional hives. Some are good, some are bad. Some fulfill most requirements, others are almost useless. The important factors are:

1. All chambers must be perfectly interchangeable.
2. All frames must be securely held in those chambers.
3. Top and bottom bars of frames must be of such width and thickness as to offer as little obstruction as possible.
4. A desirable though not essential feature is having supers of same size as a brood-section.

The three first of these were embodied in Mr. Heddon's hive. Unfortunately the close-fitting frames in his cases are not adapted to many parts of our country where excessive dampness so swells the frames as to force the sides asunder. More room between the frames and the case, and some form of yielding clamp (instead of the set-screws) are necessary. There are many ways these ends may be reached; but which are the best, only time will determine.

Granted a suitably constructed sectional hive, it may be asked wherein we are to secure any material advance over the use of single-chamber hives. First and chief of all, we must acquire the ability to diagnose the conditions of colonies from views of top, bottom, and middle. This is not difficult, but takes a little time to learn. It is also important to learn to "size up" a queen by the external appearances of the colony. Another valuable matter is to learn to get the queen without removing the combs. There are several ways in which this may be accomplished. Often she may be driven on top of the combs of one section or the other by the judicious use of a little smoke. By separating the hive sections the bees will quickly tell us which one is without the queen, then the bees may be shaken out and the queen readily found; and it is by no

means necessary to shake out all of the bees, as, often, the first jolt will bring the queen. But it is by no means essential to find the queen as often as some apiarists do.

"Shaking out" bees sounds hard, and is hard; but "jouncing out" is easy and simple. Rambler's "jouncer" is excellent, but not a necessity. By holding a case a foot from the ground, and dropping one end against the turf, and instantly lifting that end and dropping the other, a greater part of the bees will be dislodged. Of course, this would not do with a case of new combs heavy with honey; but these seldom require jouncing. I have, however, used the bumping process safely with cases of honey in sections.

Vitally associated with *all* hives is a factor seldom if ever mentioned, and it is doubly important in using sectional hives. It is the strain or race of bees. Queens of some will pay small heed to frame bars or spaces, while others are stopped by the slightest irregularities. It may be taken as an axiom that a hive is relatively large or small, not so much by its cubical dimensions as by the *character* of the colony contained therein.

An apiarist in selecting a hive needs also to consider the nature of the nectar resources of his locality; i. e., one flow or several, quick or slow. The size of hive which suits Mr. Morrison does not suit Mr. Greiner. Management suited to Mr. M.'s locality has to be modified to fit Mr. G.'s.

As to drones, I can not see that the rearing of a few is of any material harm to the colony. To be sure, it costs something in bee energy and food; but who can say how much more is lost by trying to prevent entirely all such production? With sectional hives we can reduce the drone comb to a few square inches in one frame of each chamber, where it will remain almost indefinitely. With the movable-comb systems, we some days find several such combs assembled in one hive.

Queen-excluding honey-boards are by no means necessary, though often very convenient.

It is a debatable question whether or not more honey can be secured (under any and all conditions) with a sectional hive than with the single-chamber type; but I believe it is beyond dispute that, in sectional hives at least, equal results can be accomplished with much less labor, and that the bees are more completely under the control of the apiarist.

Remember "sectional hives," "sectional system," "single-chamber hives," "single-chamber system." Don't mix the systems any more than you would the hives.

Providence, R. I., Jan. 12.

[When Mr. Heddon first introduced his sectional-brood-chamber hive in 1885 he (or possibly Mr. Hutchinson) drew a sharp distinction between shallow hives and sectional brood-chambers; but as there were so many depths, and the methods of man-

agement for either were more or less diverse, it became almost impossible to carry out the distinction; and, to avoid confusion, the two terms were allowed to pass for one and the same thing. While, technically, there is a distinction, the public has not recognized it.—Ed.]

SOME COMMENTS ON LATE ITEMS.

Home-made Hives; Frames Supported on Nails;
Modern Queen-rearing; Drone Comb in
Shaken Swarms.

BY E. F. ATWATER.

GLEANINGS for Dec. 15 is at hand; and in reading it I see several points about which I feel tempted to say a word.

In regard to Dr. Miller's Straw, p. 1040, in localities where lumber is very high in price, and bee-supply factories near, I suppose it is true that it would be a losing venture to make one's own hives. However, in localities where a good quality of lumber may be bought for \$20 per 1000, it may pay to manufacture them at home. One of our local planing-mills has excellent machinery for the purpose—fine-tooth saws and iron-top tables. They have a large amount of short pieces of various lengths and widths, left from other work, and from these my hives are cut at a very substantial saving.

Doolittle's "conversation," p. 1042, will surely give the novice, in the great majority of locations, expectations which can never be realized. While Mr. D. has secured an average net income of \$1045 per annum from an average of 75 colonies, spring count, for the past 28 years, yet I am safe in saying that, in very many localities, one would need at least five times that number of colonies to secure such an average income.

"Frames supported on nails," page 1044. Mr. Geo. E. Dudley, of this State, uses such frames, and credits the idea to the late B. Taylor. They are closed-end frames, $17\frac{3}{8} \times 9\frac{1}{2}$, with a bee-space around the ends the same as the regular L. I have on hand 2000 shallow unspaced frames, hanging on nails, for use next season.

"Honey-plants of Arizona," p. 1046, "a can of honey (60 lbs.) to the ton of hay." If that could be realized in this locality I might expect as large profits as Mr. Doolittle.

"Modern Queen-rearing," p. 1049. When I rear queen-cells in a divided brood-chamber the bees often start to supersede their queen, seeming to think that she is responsible for the restricted egg-laying, which results from confining her to two or three frames. Instead of changing the queen from one compartment to another I keep her on one side, and supply frames of hatching brood from other colonies, to the side where the cells are being built. By this plan there are never very many unsealed larvæ in the hive at any time, and always an immense force of nurses, eager to build queen-cells and feed larvæ. By keeping a best breeder

on one side, on two or three frames, the larvæ will be superabundantly fed with the larval food, and very easily transferred.

"Drone comb in shaken swarms," page 1055. Mr. Gill's method of making forced swarms is very good indeed (I say this because I use the same method with good results). But, really, Mr. Morrison's "little half story," with full sheets of foundation, may be used with splendid results where one wants nearly all the honey in the supers, as I know from an extensive trial. Put such a big swarm in a shallow case, with abundant super room, and they will very often swarm out. Hive them in two cases, with abundant super-room, and they will stay. They will almost invariably build comb and rear brood (while storing in the supers) in the upper case only, for the first week, so at the next trip to the yard the lower case is removed. Of course, they will then occupy and fill more supers than they would if they had been hived in a full-depth eight-frame hive.

At one yard there was a shortage of shallow cases having but one for each swarm. There was a lot of rims of light stuff, four inches deep, used to hold chaff cushions; so when hiving the forced swarms I put one of these empty rims under each shallow case. At the next trip every swarm was found doing good work, and the light rims removed.

Boise, Ida.



PUTTING SWARMS BACK ON COMBS INSTEAD OF FOUNDATION.

I have been studying on the different plans given in these columns for putting back swarms. I want to try the plan next summer of letting the bees swarm out, and then taking away four of the middle frames of brood. Instead of putting back four frames of foundation, would it do just as well to use frames of comb? I have lots of them. Another question is this: If a queen gets into the habit of having a small brood-nest the first summer, is she supposed to be of any use after that? Some hives seem to have queens whose bees are allowed to fill the brood-nest too full of honey.

Farris, Wash. ANITA A. BYERS.

[This was referred to Dr. Miller, who replies:]

Combs will answer as well as foundation in carrying out your treatment of swarms.

Restricting a queen as to laying in her first summer is not likely to make any appreciable difference in her second summer's work.

Having answered the questions asked, let me answer one you haven't asked, by saying how your proposed treatment of swarms is likely to succeed. Swarming will be delayed, and in some cases prevented entirely, by taking away four frames of brood or less before preparations for swarming have proceeded too far; and the nearer to completion those preparations, the more difficult to persuade the bees to give up all thought of swarming. When preparations are completed, and they have actually proceeded to the act of swarming, no light thing will dissuade them; and after the removal of four frames of brood you may pretty safely count on their swarming out again.

C. C. MILLER.

QUEENS THAT DO BETTER WORK THE SECOND SEASON.

The queen I got from you two years ago last June did very poorly the first summer, but the second summer she did a good deal better.

GEO. F. LESLIE.

Edgecliff, Pa.

[Friend L., this sometimes happens, but I think not often enough, as a rule, to pay trying a queen that makes a poor record the first season. Of course, we want to be sure she has a good chance—plenty of bees to start with, and everything favorable. I have sometimes kept queens for special reasons through a second season, even though they would not seem to be able to produce the usual amount of brood the first year; and I remember a few cases where they seemed to be better the second year.* We keep imported queens usually as long as they live, even though they sometimes get so old as to lay only a few eggs—that is, where the queen has been a valuable one, and we want her eggs for rearing stock. It has been suggested that very prolific queens sometimes exhaust themselves the first season, but I have not been able to find any such. The queen that produces a tremendous lot of bees the first summer will be very likely to do the same thing, or nearly the same thing, the summer after.—A. I. R.]

FLAT COVERS OF CALIFORNIA REDWOOD.

Referring to covers for hives, page 1044, you say, "The fact is, clear wide boards in sufficient quantities to care for the trade for such covers can not be bought at any price." I suppose you mean pine lumber that wide can not be procured; but I am using flat covers made of California redwood, and I buy it at retail for 6 cents a foot, which is the same price I would have to pay for clear pine 12 inches or over in width.

I can buy redwood from 10 to 24 feet long, and 4 to 24 inches wide, all clear, and dressed both sides, at the price mentioned. Our lumber-dealer tells me it will not

* Not very long ago friend Doolittle mentioned in the *American Bee Journal* a queen that was condemned the first season; but the next year she proved to be the best queen the man ever owned.

shrink, swell, warp, check, nor rot after it is thoroughly seasoned. I use the ten frame Dovetailed hive, and have to buy boards 18 inches wide, as the redwood is all cut to vary two inches in width. I used some for covers during the past summer, and they are on the hives at present on the winter stands, and they are as good as when new. I nail a piece of $\frac{3}{4}$ inch hoop iron across the end with 2-penny fine wire nails nailed about two inches apart on opposite edges (but I think a channel iron as used on your new Danzenbaker nailless cover would be better), and give them three coats of good paint. L. M. GILBERT.

Naperville, Ill.

[Yes, I was referring to pine, and in this section the redwood would be even more expensive. But a cover of lumber costing 6 cts. per foot is rather expensive. If we had to furnish covers for our trade costing this figure the price on hives would have to be advanced higher still.

Redwood is a fine timber, and will warp and twist as little as any lumber known. I have seen many such covers in use in California and Arizona; but let me advise you to cleat your covers at each end. The strap iron, such as you describe, would hardly be rigid enough.—Ed.]

CAGING QUEENS TO PREVENT SWARMING.

I intend to cage some of my queens this summer, to prevent swarming. Let me know what sort of cage is needed, if any candy is needed, and how long she must be caged. Do any of the big honey producers cage their queens? What do you think of it? SUBSCRIBER.

Manhasset, L. I., Dec. 27.

[Any kind of cage that will permit of a small supply of soft sugar candy will be suitable for caging the queen. While the candy is not absolutely necessary, perhaps, it is advisable to have it where the queen can get to it but not the bees.

I do not know of any large honey-producers who are practicing the method unless it is P. H. Elwood, of Starkville, N. Y. We tried it, but thought it discouraged the working energy of the bees.—Ed.]

PRICE FOR HELP IN THE APIARY.

If a man has several colonies of bees on his farm, and desires an experienced apiarist to take charge of and manage them for the season, what condition or terms would be considered right to both the parties? W. H. KERR.

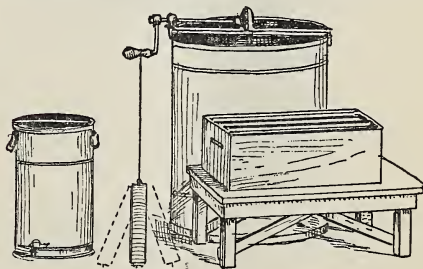
Crawfordsville, Ind., Dec. 1, 1903.

[The price for bee-help will depend a great deal on the price of labor in your vicinity. You may have to pay all the way from \$1.50 to \$2.50 a day; but if you have only a few colonies it would not pay to have hired help. But perhaps you refer to keeping bees on shares. If so, the rule is for

one party to furnish the bees and all the supplies except the sections, and receive all of the increase and half the honey and wax; and the other party is to have his half of the honey and wax, but not the increase.—Ed.]

HONEY-EXTRACTOR DRIVEN BY FOOT POWER; A GOOD IDEA.

I take pleasure in showing a kink which saved me one hand or one whole helper, for that matter. The sketch shows the arrangement. The comb-box is at the right hand, and the uncapping-can at the left, and a little in front. I uncapped two combs and place them in the extractor; start the crank with the hand, then work the treadle.



While doing this I take another comb, uncapped, and place it in the comb-box. I now turn the frames in the machine, start it going again, and take another frame; uncapped, and exchange the combs, and proceed as before. When one foot gets tired I push the treadle on the dotted lines, and use the other. There is no change of position except to turn the arms and shoulders from right to left, and reach ahead to the extractor—no stooping. A two-frame extractor of the Novice type runs very easily. The treadle is $1 \times 2\frac{1}{2}$ in. by 3 long, with a piece of broom wire to the crank. Whenever you wish to turn by hand you can do so any minute.

To make a brush, cut a $\frac{3}{8}$ rope 9 in. long; unravel, and lay out flat. Nail two sticks, one on each side, and bring the other ends close together for a handle. It is ahead of any thing for me. I learned how to make brush from a man by the name of Crow. If nails are driven about $\frac{1}{4}$ in. apart, so the points will about come together, you will have the stiffness as well as the friction to hold the rope strands.

I have made about 100 hives by nailing—no halving, mitering, nor dovetailing. I have used these three or four years, and not one has given way. Of course, most people will buy their hives, and they can be dovetailed cheaply with machinery.

Pittsville, Wis.

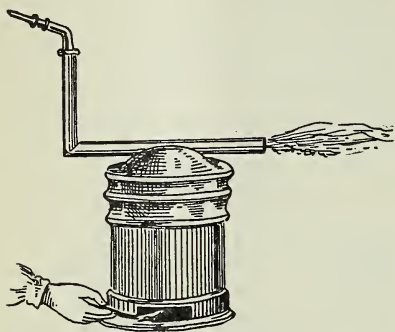
A. B. WHITE.

[Your foot power and general system of extracting are very good; and on the small light-running non-reversing extractors it will do very well.

The method of making the brush is something that has been in use for a good many years. It is good, however.—Ed.]

A COLD-BLAST GERMAN SMOKER.

Smokers seem to form an important feature in America. The smoker I like best of all is the one invented by bee-master Dathe, in Germany. It is something like a pipe, and must be held with the teeth. The top part can be opened, and the pipe may be filled with dry stuff. I always use very cheap tobacco. By blowing in the mouth-



piece, and holding a match under the pipe, the stuff begins to burn. The advantage of this pipe is that both the hands are kept free for working, and a puff of smoke can be given just when and where it is needed, without stopping the work. The pipe is made of brass or tin. C. KNEPPELHOUT.

Driebergen, Holland, Dec. 30, 1903.

[This smoker embodies the well-known principle of the atomizers found at the drug-stores, and is, therefore, in effect a cold-blast smoker in that it creates a vacuum near the nozzle, causing the smoke to be sucked from the burning fuel, and to be blown out through the nozzle. These mouth smokers have never been very popular in this country.—Ed.]

GOOD WINTERING IN A CELLAR WITH A FURNACE; HOW IT WAS DONE.

I am much interested in wintering bees in a cellar with a furnace. I had a furnace in my cellar for several years until last season. Did I have the courage to try to winter bees in such a place? The main part of my cellar where the furnace is, is 20×20; then there is an L 9×14. This I partitioned off by setting 2×4's up on end and siding up on both sides. This left a space of 4 inches which I packed with sawdust. This is a non-conductor of heat. I have a door through this partition, connecting the two cellars. I have a north window and outside door in this "cold storage," as I call it. In this room I have all my vegetables for winter use. Last winter I placed 22 colonies of bees in this storage place—the lightest I could pick out. I kept this place as near 45 degrees as possible by opening the window. If it got too cold I opened the door, letting in some heat. Now, how did the bees come out? Just perfectly clean, and as sweet as when put in. When

I set them out they spotted but little. I don't think they consumed over 3 lbs. each while in the cellar. Now, I have over 30 in test this winter; and, say—what a fine place to keep vegetables! This could be kept nearly at the freezing-point.

If any one having a furnace in his cellar will partition it off with a sawdust packing, he will find it all right. I could not see that fresh air from the windows did any hurt so long as it was dark. I darken the window from the outside.

Jackson, Mich.

W. D. SOPER.

[Your arrangement is ideal, providing you can keep the temperature from going too high. The furnace offers one advantage in that it enables one to raise the temperature when it is too low.—Ed.]

MAPLE SUGAR AS A BEE-FEED.

Can you tell me whether it was ever tried to feed bees with maple sugar, and whether this same sugar is good for a stimulant? Gilpin, Md.

H. S. KRUMLINE.

[Syrup made of maple sugar or maple molasses has been given the bees a good many times. Unless the sugar is of very poor quality it would be cheaper to use regular granulated sugar, from which a more wholesome syrup could be secured. We have used maple-sugar cakes of poor quality, putting the same on top of the frames, to stimulate the bees in the spring, but we do not advise it as a midwinter food, as it would be liable to bring on dysentery before spring.—Ed.]

SHALL BEES BE ALLOWED TO HAVE WINTER FLIGHTS WHEN SNOW IS ON THE GROUND?

I should like to know if it would be necessary to block up the entrance of a hive when the ground is covered with snow on a warm day, when the bees fly out on the snow and die. My entrance is about 4×½ inch. This morning I put a piece of wood half way across the entrance, and this noon they have been flying out and falling on the snow. I have now got the entrance up with wire netting.

C. WUETIG.

Blue Island, Ill.

[It is a little difficult to answer your question as you put it. As a general thing we may say that a midwinter flight for bees is beneficial—especially so if their abdomens have become distended with fecal matter. There are times when I have been satisfied that it would have been better to have the entrances entirely closed, for sometimes the sunlight will induce bees to fly out in an atmosphere just a little too chilly for them to get back. The consequence is, thousands and thousands of them rush out into the sunshine, and, becoming chilled, they alight on the hives, and even in the snow, where they perish. If the entrance is shut at all it had better be closed with snow rather than with wire cloth. I think

we may conclude this: After the bees have had their first flight it would be better to keep them in, especially if the air is chilly; but if it is quite warm, a flight will do no harm, but, rather, good.—E.D.]

REPORTS ENCOURAGING

I started in the spring with 12 colonies; bought 25 more in box stands; transferred them and increased to 60, and took over 6000 lbs. of honey. This is my third year with modern hives. J. C. PETERSON.
Devine, Tex., Feb. 4.

A GOOD IOWA REPORT FROM AN OLD FRIEND.

From 108 I increased to 210, and took 13,703 lbs. surplus, or about 127 lbs. per colony, spring count, which we consider good for Central Iowa. D. E. L'HOMMEDIEU.
Colo, Ia., Feb. 15.

ONLY ONE FAILURE IN 24 YEARS.

I have 100 colonies in the cellar, mostly in Quinby hives. I started with such, and have done well. I never missed a paying crop but one in 24 years. I don't run after fads, nor change for every thing new that I see, even if I see it in GLEANINGS. JOHN YODER.
Springfield, Ont., Jan. 24.

FROM 35 COLONIES 3000 LBS.

My report is 3000 lbs. from 35 colonies. One swarm, hived late in June, made 147 lbs. comb honey, and had plenty of stores for winter. My hives that had not swarmed for six years cast swarms. Some went back and went to work with a rush. Bees are wintering well. WM. G. SNODGRASS.
Montrose, Mo., Feb. 12.

FROM 24 COLONIES (4 QUEENLESS) TO 37, AND 1645 LBS. OF HONEY.

I had 20 colonies with laying queen, and four without, this spring. I increased to 37, and had 1045 lbs. of comb, 600 lbs. extracted. I think that was good for this cold season. It was gathered in June and ten days in July. No fall honey here. JAMES E. HARWOOD.
Benzonia, Mich., Feb. 8.

REPORT FOR 1903.

From 25 colonies (most of them not much better than nuclei), spring count. I have sold and given away to date, as follows: 2142 lbs bulk comb; 1764 lbs. extracted; 93 4x5 sections of honey; 37½ lbs. of beeswax; 24 nuclei (with queens), and five queens. I now have left 32 colonies (nearly all of them in good order), and a little honey still unsold. M. A. SALAZAR.
Cottulla, Tex., Feb. 2.

FROM 60 TO 125, AND 8544 LBS. OF COMB HONEY.

May 1 I had 60 colonies, but three of them were queenless and some of the others were weak. Then I increased them during the season to 125, and received 8850 sections of finished section comb honey, or 8544 lbs. The hives are all eight-frame Dovetailed, with all the frames wired, and full sheets of foundation in every one. The supers all take the plain 4¼ section. I keep all queens clipped, and replace when two years old, unless extra good. I am very well pleased with your make of hives. I send you a photograph of my honey. JOHN R. MILLARD.
Knoxville, Ia., Jan. 18.

[The photo mentioned shows a lot of beautiful honey that might make any bee-keeper's heart glad, stacked up in neat cases and nice square piles clear to the ceiling of a very nice and tidy honey-room. If the picture had not been too dark I should have been glad to give it to our readers.—A. I. R.]

FROM 6 TO 20, AND ONE TON OF HONEY.

I started in last spring with six colonies of Carniolans; took one ton of extracted alfalfa honey, with an increase to 23 colonies. Bees are now all in first-class

condition, in Simplicity 8-frame hives, with only oil-cloth under the covers. Lowest, 10 degrees below; average about zero for January at daylight, but bees had a fly almost daily. Plenty of fine land yet open for homesteading here.

Italian bees will probably do nearly as well if they do not swarm too much. S. W. MORRISON.
Ignacio, Col., Feb. 6.

A SCHOOL MA'AM'S REPORT.

My mother, who is now 80 years of age, thoroughly enjoys reading your Home Talks, and Notes of Travel, as well as the articles on bees and honey.

About 17 years ago a runaway swarm of bees clustered on a tree in our yard. We secured the bees in a barrel, but knew nothing about caring for them until we saw a copy of GLEANINGS. We subscribed and sent for a few eight-frame hives, which are so easily handled that mother's love for bees was increased many fold. We now have nine hives, which are all an old lady of 80 and a school-teacher's daughter can successfully care for. We love our bees, and I must say that they behave remarkably well. We are not afraid of them, and they do not seem to fear us. Our crop of honey could not be excelled in quality and finds ready sale at 15 cents in the summer and 20 in the winter. Your articles about "the cabin in the woods" have been so interesting that we have often wished we might "step over" and see the cabin, the peach-trees, and that potato-patch.

No publication has ever given my dear mother more real pleasure than GLEANINGS. MARY MARTIN.

Petersburg, Ill., Jan. 21.

\$101.10 FROM A SINGLE COLONY OF BEES IN ONE SEASON.

I have a wonderful story to tell about keeping bees, and it is a true story, as I can demonstrate by entering into the particulars. I thought at first I would publish it in some of the bee-papers; but upon more mature thought I concluded to wait until I did the thing again; but it was never done again, even though I tried it over and over.

I made out of one Italian hive of bees, which cost me nothing (the fellow gave them to me), the enormous sum of \$101.10. This may seem to you old bee-men fishy; but I made my own hives; all the outlay I had was for sections, foundation, and a little lumber. Some of it was there for the using.

With just a suggestion or two you may see a little light on the subject. First, it was the best honey season I have ever seen—none like it before or since; honey-plants galore, and honey-dew on plant and leaf everywhere. Secondly, I sold every pound of my honey at 10 cents, and kept none. In the fall I sold the bees for \$5.00 per hive. Thirdly, they multiplied to nine colonies. The old one sent off three, the first swarm sent out two, the second two, and the third one, making nine in all, which brought \$45.00 of it, and the rest was in honey sold. Now, I have the figures for it, and "don't you forget it."

I never had, this printed, but I did have men who make bee-keeping a business, come to see me to know how it was done. Well, it wasn't done at all—it just happened, though I thought for several years afterward it was done, and I did it; but my later and longer experience taught me it just happened through and by a set of contingent, unusual circumstances and likely never to occur again; at least this is my thought about it now. S. R. FERGUSON.

Sumner, Ia., Jan. 18, 1904.

[Friend Ferguson seems to be a little afraid it was unwise to tell this story, as few people will believe it. If he had taken and read the journals for the past forty years, I think he would have found several similar reports—perhaps some larger. There is a valuable point in the story, that has come up many times. Wonderful things may be accomplished by natural swarming during a favorable season. I had one similar experience that was given in the *American Bee Journal* before GLEANINGS was published. One of the requisites is to have a queen full of vim, and one that will transmit this very vim to her daughters; then let them get the swarming-fever; and, if the honey holds out, this one colony will make a good-sized apiary in one season, and may give you quite a lot of honey besides. When I read father Quinby's first book on bee-keeping in box hives and natural swarming, I felt a strong inclination for a time to run an apiary on just that plan. In the above narration there was a good colony of Italian bees to start with—very likely the young queens proved to be, many of them, or most of them, hybrids; but this would not hurt the final outcome.—A. I. R.]



Blessed are ye when men shall revile you and persecute you, and say all manner of evil against you falsely, for my sake.—MATT. 5:11.

When I came back from Northern Michigan last summer I was asked to take a particular class of boys in our Sunday-school; I was also told that those boys, or perhaps I should call them young men, were not a very easy class to manage; and the superintendent said he hoped I would be able to keep them in order, and do them some good, as many of the best teachers had about given them up. In accordance with this I prepared myself carefully with the lesson, and did my very best to get the boys interested in some way, and hold their attention. It kept me pretty busy, but I succeeded rather better than I had reason to expect from what I had heard. They were really a nice lot of young men in many respects, children of well-to-do parents, and pretty well posted on what is going on all over the world; and for several Sundays I really enjoyed teaching the class. When I told them I was sorry I should have to be away again for a month or more, I had one of my pleasant surprises, for two or three expressed regret, and said they wished I could keep the class all the time.

While it is true I was succeeding fairly well with the class, it is *also* true that there was a good deal of disorder and outside talking. The secretary told me the class had had no quarterlies for a long time, because they just tore them up as fast as they were received. They had a lesson-paper each Sunday, but these were usually torn up to make wads to throw at each other.

I presume the average Sunday-school teacher will think, when I confess I allowed more or less of this work to go on, it is somewhat a question whether I was really doing the boys any good. When the class was small, or when the ringleaders were absent, I got along very well; but when the whole ten were present it kept me about as *busy* as any job I ever undertook. I almost began to dread God's holy day. Of course, it set me to praying for the class; but, with scarcely an exception, when the lesson closed I felt happy. The Holy Spirit seemed to say, not exactly, perhaps, "*Well done, thou good and faithful servant,*" but it did say to me that I had done fairly well; and I felt happy because I had made the effort. I felt happy because I had reason to think I was gaining the friendship, little by little, of each one of those boys.

During Mrs. Root's sickness, however, I was absent several Sundays; and when I got back I seemed to have lost my grip on the class. I kept thinking each Sunday I would get back; but Satan seemed to have gotten the better of me—he had a *better* grip. The class kept getting worse and

worse. Now, very likely some of these same young men will read what I am saying here in print. In view of this, may God help me to be "wise as serpents, and harmless as doves." In talking with the superintendent and the pastor of our church in regard to the matter, they both decided I had been too easy with the young men. Let me give you an illustration.

Our church has been recently warmed with steam radiators. There is a very pretty radiator in our class-room. When the class is all on hand, some of the boys are obliged to sit very near this radiator. Our radiators are all equipped with up-to-date automatic air-valves that cost quite a sum of money. We were told the radiators would not be complete without them; but that when thus equipped there need be no shutting and opening of valves to let the air out. These valves are automatic, needing no manipulation or handling. Well, these young men had got into a fashion of meddling with the air-valve. They would twist it one way and then the other, and change the adjustment, etc. First one boy and then the other would be meddling with it. When I mentioned the matter to our pastor he said I ought to insist on prompt obedience in such matters; and that if nothing else would do I should stop the lesson until I had gained obedience, even though it broke up the class. Just once in my life I sent a young man home because he deliberately disobeyed orders in the Sunday-school class; but I have been sorry since then that I did it. He felt very much hurt; and when he was transferred to another class he behaved himself like a gentleman. This would look as if it were the fault of the teacher rather than that of the boy. May God help us, who are trying to teach in our Sunday-schools, to be sure, before we resort to severe measures, that the fault is *not* with the teacher, but with the pupil. Now please, dear friends, do not jump to the conclusion that I would advise a teacher to resign, and conclude that he has no ability, just because he has trouble, or, say, such troubles as I have mentioned.

Yesterday, Feb. 14, my class behaved worse than ever. I finally stopped proceedings, and told them that I feared the class would have to be broken up. Several said, "All right, break it up;" but it had the effect of quieting them for a while. I said something like this:

"Boys, you are my personal friends—at least I believe you are. It will not only be a disgrace to *you* if the class is broken up, but a disgrace to me, because I shall have to admit that I am not equal to the task of keeping order; that I have not a faculty, even with the long years of experience I have had in Sunday-school work, for maintaining discipline. It will also cast a slur on our whole Sunday-school to have it publicly said that there was a class of boys in it that no one could manage. Now, I might send you home one by one because you refuse to obey orders; but I do not want to do

that. Whatever I do, I wish to maintain your respect. I am praying that God may help me to hold your confidence and your good will, whatever may happen. Last of all, most of you are *church-members*.

We got along pretty well after that. Usually, before closing a lesson I give the boys a hint of what is going on in the scientific world. One evening I gave them a glimpse of my specimen of radium which I have told you about. On this particular Sunday I said, just before the last bell rang, "Do you know, friends, that two Ohio boys, or young men, rather, have outstripped the world in demonstrating that a *flying-machine* can be constructed without the use of a balloon? During the past few months these two boys have made a machine that actually flew through the air for more than half a mile, carrying one of the boys with it. This young man is not only a credit to our State, but to the whole country and to the world."

"Where do the boys live? What are their names?" said a chorus of voices.

"Their names are Orville and Wilbur Wright, of Dayton, Ohio."

"When and where did their machine fly?"

"Their experiments were made just before winter set in, on the Atlantic coast, at Kitty Hawk, N. C., at a place where there are several miles of soft sand blown up by the wind. They chose that sandy waste so that, in case of an accident, they would not be apt to be severely hurt by falling. For the same reason they managed it so as to keep the machine within five or ten feet of the ground. As soon as we have warm weather they are going on with their experiments. The machine was made something after the fashion of a box kite. A gasoline engine moved propeller wheels that pulled it against the wind. When they make their next trial I am going to try to be on hand and see the experiment."

This little story seemed to have the effect I expected it would. They seemed to have forgotten the unpleasantness about maintaining order, and I was thanking God that I had been enabled to talk as severely as I did, and yet not arouse any bad or vindictive feelings in their hearts; but as we passed out of the door of our room, however, one of the tallest and brightest of the group said something like this:

"If they take you up in the machine I hope they will let you drop; for we haven't any use for any such 'old thing' around here."

I glanced quickly at the speaker's face to see if it was a bit of pleasantry; but he simply looked hard and sullen, or at least I thought he did. He had been one of the worst offenders *that day*, and he seemed not to have forgotten my severe words after all, even though he had listened intently to what I had to say about the flying-machine. Let me digress a little.

Years ago, at an open-air meeting among a class of youths, I read to them in the

Bible about turning the other cheek also, when somebody hits you a blow. One of the hearers interrupted me by saying, "Mr. Root, if somebody gives you a clip on one side of the head, will you turn the other side and let him hit you again?"

I replied that I would try hard to show that kind of spirit. The reply came quick:

"All right; may be you would; but I should like mightily to see it *tried on*."

These words have rung in my ears a good many times since then, and it happened perhaps nearly thirty years ago. I have tried to school myself to receive all kinds of clips, and still keep cool and quiet, and not feel mentally troubled or worried. Sometimes I have felt as if it were too much to expect any speck of humanity to render, under all circumstances, good for evil. A few times I have succeeded in looking pleasant and good-natured, even while stinging from a blow, or when inwardly stirred up to fierce rebellion.

On the way home I kept thinking about that unkind fling. It seemed as if there was an almost satanic ingenuity in it. It implied, or at least I thought it did, that I was getting to be too old to undertake to teach a crowd of boys in their teens. Perhaps it was Satan that kept suggesting I had lost interest in boyish sports—that I was getting so well along in years it would be better all around if I should cease even trying to teach any longer. Could it be true I was getting too old to be of any further use among men or among boys? Why, just a week or two ago, our family physician said, when I started on a little run to catch up with the rest of the crowd, "Why, Mr. Root, you run as spry as a boy of sixteen instead of a man over sixty;" and I have prided myself on being as spry, both physically and mentally, and, I *hope*, spiritually, as I ever was. As I pondered on that speech about being too old to be of any further use here in my native town of Medina, I wondered *how many* of that class were of the same opinion. Had the boys been *laughing* at my attempts to control them? May be the *superintendent* thought I was too old to undertake to handle such a class. I told Mrs. Root about it, and she felt hurt too. I did not enjoy running my automobile home from Sunday-school; and during that whole afternoon when I attempted to read, that unkind speech kept haunting me. I told some of our people about it—that is, the grown-up children—the parents of our grandchildren—and *they* were quite indignant. The idea that A. I. Root, who had helped to build up the town of Medina, was of no further use in it, and that it would be a general gain if he could be "dropped out of a flying-machine" or gotten rid of in some other way! As I thought it over it seemed to me as if the sting was greater than if I had been knocked over with a club; but, dear friends, *it did me good*. It set me to praying; and my prayers cleared the sky somewhat, especially when on bended knees I remember-

ed the text at the head of this talk. *Then* I began to receive a blessing. The Holy Spirit reminded me that I was getting to be a little bit proud—proud, perhaps, of my past record and of my ability. I needed humbling, and God knows I *felt* humbled. Then a blessing came. I resolved to see my boys, and have a talk with them. The first one I met admitted, with rather downcast eyes, that I was right and that they were wrong. He said that, in some way, they had gotten into a rut, and it seemed hard to get out of it; and then he gave me a most happy surprise by saying that the tall young man had no thought of applying that cutting remark to myself. There was a mischievous little chap who generally helped along all the merriment going on in the class; and this fellow said, just as they were going out, that *he* would not be afraid to go up in a flying-machine clear up into the air, instead of keeping only ten feet from the ground. Then the tall one replied, and his answer, *to me*, came as he passed me, and, I thought, as he was looking at me. The answer was, "Well, if they do take you up I hope they will let you drop, for we haven't any use for any such 'old thing' around here." But my pride had received a stinging lesson; and while my young friend is fully exonerated I hope the lesson I received may do me as much good as if his remark had in truth been intended for my poor self.

I have had just one other experience lately in being humbled. There are some more strange words in that fifth chapter of Matthew—I mean the ones right after, where we are admonished to "turn the other cheek also." The Savior said, "If any man will sue thee at the law, and take away thy coat, let him have thy cloak also;" and in the 39th verse we read also, "But I say unto you, that ye resist not evil." These admonitions, as I take it, are to brace us up against the temptation to demand continually "our rights," or, in other words, to make a *big* fuss about a *small* injustice. A little difficulty arose about settling up an account. The transaction occurred during Mrs. Root's recovery from her recent sickness. She was still weak and rather nervous. We were taking great pains to have every thing quiet around the premises. But this particular business transaction could not well be managed elsewhere just then, and I felt sure, even if she were listening, she could not gather what was going on. Let me digress enough to say that the senses of sick people are sometimes extremely acute. I know by experience that, where one is obliged to lie still and watch the hours as they go by, listening to hear the clock strike to see how time passes, they get so they "catch on" to things that ordinarily would be unnoticed.

In settling up this affair, which was, perhaps, a little complicated, I knew my neighbor did not feel pleasant toward me, and I made up my mind that I would not argue over a difference of three or four dol-

lars; but when I was called on to pay him twice that amount, which it seemed to me I did not justly owe, I, in a courteous way, asked for an explanation. My opponent resented this, and, in spite of myself, *I* got somewhat stirred up. It looked then and there as if it were right and proper to resent extortion, no matter what the consequences were. I had good sense enough, however (thank God) to realize that it was not safe for *me* to open my mouth any further. That little alarm prayer that I told you about years ago began to ring loudly—that old prayer of mine, "Lord, help!" and I dropped the matter. I submitted to what seemed to me great injustice. Soon after, I passed through the sick-room. I was hoping that Mrs. Root had not overheard any part of what I have mentioned, but I was a little fearful. She beckoned me with her finger. When I told her I had submitted for *her* sake, if for nothing else, she suggested that I should beg my neighbor's pardon. Now, right here came a big tussle. I do not know that it ever before occurred to me, circumstances might make it a duty, not only to give way to an unjust demand but also to beg pardon because you did not submit to the unjust demand with a *more cheerful spirit*. When a loved one is on a bed of sickness, it is of the utmost importance that there be no disturbance or discord going on, especially nothing that the sick one shall get hold of. Under the circumstances Mrs. Root's slightest wish or even suggestion was a law to me, and I made haste to do all she suggested. In fact, after I had recovered a moment I considered I *could* honestly beg pardon of my neighbor for even arguing over the matter of only six or eight dollars at that time—that is, I could consent to give him whatever he asked for, whether right or wrong, to avoid any unpleasantness *then* and *there*. And *then* I could see how such a spirit will help us to get along in this world. One who follows Christ Jesus may be called on to give not only his coat but his cloak also; and that, too, when the demand for either of them is a piece of injustice. Do you not see, dear reader, how many lawsuits, foolish quarrels, fights among neighbors, and even *murders*, might be averted where one of the parties is willing to say that, for Christ's sake, he would give up his coat and cloak a'so? or, in other words, if one of the neighbors who are in a quarrel should say, "My good friend, you are a neighbor; and, even though I can not but feel that your demand is unjust, I will submit to it rather than quarrel over a few dollars;" or, if you choose, over a small strip of land where there is a division line. I have prided myself all my life on being ready to be fair and honest in deal. I have always prided myself on thinking that *I* certainly am easy to get along with. I do not know but I shall have to admit here in my old age that, perhaps, I am not always easy to get along with after all. It is easy

enough for me to agree to what I think is fair and just; but when I feel so sure that my opponent demands something clear out of reason, then I confess it is hard for me to give up. And then it is a pretty big task, after I have once given up, to be obliged to go and beg his pardon when I feel sure that I was exactly right and he entirely *wrong*.

Now, dear friends, if I have succeeded in making some beautiful passages in that old Bible shine out in a brighter light than they ever did before, then I shall be glad. If just one poor struggling brother or sister who reads GLEANINGS shall feel more inclined to read over and over again the wonderful words of the Savior—the words he uttered while here on earth, living just such a life as we live, then I shall say *again*, “May God be praised.”

THEATERS AND THEIR TENDENCY.

After my Home paper in the Feb. 1 issue was in type I was pleasantly surprised to see how a sermon by Dr. Bartlett, of the First Congregational Church, Chicago, endorsed the position I have taken as follows:

The whole awful catastrophe in the Iroquois theater was a combination of tendencies in an unwholesome modern life in which “graft” and selfishness and money-getting and pleasure-seeking joined hands in a revelry of death that has left the city prostrated and weeping. But what of the future? It is well to point out to Christian people who are occasional theater-goers that they are voluntarily putting themselves into the hands of tricky and unscrupulous men whose only care is for the dollar.

Can it be truly said that the theater in any way assists the spiritual life or reinforces the work of the church? The majority of plays are said to have something objectionable in them, and several young men have told me this one was no exception to the rule. Let us walk soberly before God this year, and choose our recreations and all our life with eternity in view.



HIGH-PRESSURE FARMING.

Julius Johannsen, of Port Clinton, Ohio, a progressive farmer and greenhouse man, sends us the following clipping from the *Watchtower*:

About ten miles from Philadelphia there is a farm of fifteen acres, the owner of which has brought it to an extremely high state of cultivation. The results are almost past belief. The matter has been attracting the attention of the United States officials, who have been keeping tab on the wonderful doings of this farm for the past four years.

I visited the farm, and met the owner personally. He is a minister in the nominal church, and manages this little farm additionally. On the fifteen acres he was supporting, at the time of my visit, twenty-nine head of cattle and three horses. He raised all the feed for this stock on the fifteen acres, and sold additionally considerable hay and grain which he was unable to use. He has a good-sized house and barn on the premises; and last year, besides maintaining himself and family from the proceeds of the farm, cleared from it a profit of \$2100. He has brought his farm to a condition where it produces three crops annually without expending a dollar for fertilizers of any kind. The vegetation is so heavy and luxuriant that weeds

are completely choked out. There is scarcely a weed to be found on the place. All this has been done on an ordinary clay soil in only twenty years. About him on every side are farms many times as large where the owners use great quantities of imported fertilizers, gather only one crop a year, and just manage to get along comfortably. C. J. WOODWORTH.

We regret that we have not the full address of the man who owns this fifteen-acre farm; but as we have a large number of subscribers in and about Philadelphia, I hope somebody will tell us more about it. Perhaps friend Selzer may be able to tell us more of this minister who is doing such wonderful work. Twenty-nine head of cattle and three horses is what furnishes the *fertility* for the fifteen acres; but it occurs to me that this minister must have a large family of wideawake boys and girls to help, or else he employs a great deal of help. After getting further particulars I may decide to visit the place and give it a thorough write-up. I know there is a lot of high-pressure gardening going on in and around Philadelphia; but if I get the idea correctly this is not market-gardening but regular *farming* on *fifteen acres*. In our locality I have frequently grown two crops on the same ground, and a few times three; but to do this, even on fifteen acres, somebody, so far as my experience goes, has got to do a lot of hard work.

10½ BUSHELS OF POTATOES FROM ONE POUND OF SEED IN ONE SEASON.

Knowing that you are interested in potato-growing, and seeing an article in one of the florists' trade papers a short time ago that may possibly interest you, I am going to send you a copy of it. It reads as follows:

“I got one pound of the tubers (New Gold Coin potato) about March 1, 1903, and put them in a box in the greenhouse. When sprouted about two inches I took the sprouts out and put them in pots. When about four inches high I cut the tops off three or four leaves above the soil. These cuttings I potted in a compost of equal parts sand and soil. Nearly every one rooted; and when four or five inches high I took the tops off as before. This was continued until I had 465 plants from the one pound of tubers. These were set in the field at the proper time, and about September 20 I dug 934 lbs. of potatoes. Had I left them in the ground another thirty days I would have had 100 to 200 lbs. more, for many of the tubers were not fully matured.”

Now, the above may not be new to you, and may be in common practice among potato-growers who want to make the most they can out of a small quantity of seed; but while I knew it was an easy way to increase them by breaking off the sprouts and planting them in soil, it never occurred to me that they could be further propagated by cuttings taken from the sprouts.

Now, Mr. Root, don't be backward about letting me know what you want in the plant line; and if I have them or can get them for you, I will be glad to send them. S. M. PIKE.

St. Charles, Ill.

The above is “high-pressure” gardening without any question. Sometimes I have been afraid that the articles in this department did not always really belong there; but there is no question about the above; and from my experience with a properly arranged bed I think there is no question as to its truthfulness. Just now we are told in the *Scotsman* of Dec. 12, sent us by Mr. J. S. Townhead, Thornhill, Scotland, of a new potato in that country that has been sold for £150 (\$726) for one pound weight, and the buyer was offered £10

(about \$50) more than that for it later. Now, the man who has this wonderful new potato should not only read the above, but he had better build a greenhouse, roll up his sleeves, and go to work. I may say to our readers that friend Pike, who sends the above, is "the chap" who sends out rooted cuttings of all kinds of greenhouse-plants at a price ridiculously low. Send for his catalog if you want some nice plants to set in the window.

JAPANESE BUCKWHEAT IN CALIFORNIA.

We extract the following from *Farm and Fireside*:

It is reported that Yolo County, California, will make an exhibit of Japanese buckwheat at the St. Louis Exposition. It was planted Aug. 1 and harvested September 16, and yielded about thirty-six bushels to the acre. The first distribution of this variety was made by the United States Department of Agriculture in 1888. The annual reports of the department for 1889 and 1890 show that the yield was one-third greater than the Silverhull or other varieties. Seed from such crops as that grown in Yolo County would prove of great value in the eastern section of the United States, as this variety resists drouth better than the common ones, and is adapted to all localities, from the Great Lakes to the Gulf of Mexico.

The above intimates that the crop was secured in 47 days after sowing. If there is no mistake about it, I think it is a little remarkable. The best crop we ever had—over 50 bushels per acre—was harvested in 65 days after sowing. Another thing, this is the first report I have seen of successful buckwheat-growing in California. At the present price of buckwheat for seed, there ought to be "big money" where one takes pains in preparing the ground and putting it in so as to get a good crop.

HUMBUGS AND SWINDLES.

A good many people think I am queer for insisting that the editors of home papers should consider themselves somewhat responsible for the character of the advertisements they admit to their columns. From a medical journal for the home, we copy the following as a sample of the kind of advertising a good many of these home papers seem to think are all right for the family circle:

SELF-HYPNOTIC HEALING.

I have made a late discovery that enables all to induce the hypnotic sleep in themselves instantly at first trial, awaken any desired time, and thereby cure all known diseases and bad habits, control your "dream self," become a true somnambulist, pass into a wonderful clairvoyant sleep, see in visions things which are going on all over the world, travel in spirit to visit any home, and see just what is transpiring; trace up lost and stolen articles, find buried or hidden treasures; unravel the secrets of criminals; read the minds of friends and enemies; locate minerals and valuable mines; make finds and discoveries of untold value; read the very thoughts, life-history, and character of any person from the cradle to the grave; tell past, present, and future events; solve hard questions and problems in the sleep, and remember all when awake; produce the great telepathic function of the soul in a normal state, and develop your psychic faculties. This so-called mental-vision lesson will be sent absolutely free to everybody, positively guaranteed to enable you to do the above before any charge whatever.

Prof. R. E. D.

Why, it fairly takes one's breath away to read it; and I confess it gives me a sort of feeling that my next youngest grandchild expressed a few days ago. He is getting to be very much interested in electricity, and I gave him a second-hand 25-cent

dry-cell battery with two copper wires, and showed him how it would ring a door-bell. It was a great wonder to him, and he plied me with a great many questions. In order to explain it I told him the little battery contained lightning such as we see in the clouds when it thunders. Then I touched one of the wires to the coil on the bell, and showed him the electric flashes on a small scale. But it seems my explanations were almost too vivid and real; for he became frightened at the bottled-up lightning, and, backing away from it, said, "Take it away, grandpa—take it away." Now, I have something the same feeling that four-year-old Wynne had toward the electrical apparatus. If I had any faith in the professor's ability to do all he tells, "without stopping to catch breath," I think I too, would say, "Take it away, take it away—I do not want any such terrible power."

We sent for the wonderful secrets, and received a great amount of printed matter; but after the professor has declared over and over again that you are not to pay a cent until you do all he says, he wants \$5.00 before he starts in. His regular fee is \$50; but if you send him five he trusts you for the balance. If he does not demonstrate himself to be the "boss" liar of the universe, he comes pretty near it in his advertisement; and yet I suppose there are persons who will send him the \$5.00.

SEEDS

Almost every one is thinking of planting garden now. To have the best garden you must plant the best seeds. Let us start you on the road to success.

«We are successors to the seed business of Mr. A. I. Root. "The best seed at the lowest prices" was his motto and the one we are following.

«Have you seen our catalog? Write us a postal, mentioning Gleanings, and we will send you a copy, and include a trial package of our improved Fordhook Fancy tomato.

**E. C. Green & Son,
Seedsman,
Medina, - - Ohio.**